

UNICEF NEWS

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Letter to a Newborn Child. Destruction of the environment and uncontrolled population growth deeply trouble prolific author *Dr. Isaac Asimov*. He believes that advancing technology, if wisely handled, can still reverse today's trends and create a better world. (Page 3)

Africa's Food: The Inferiority Complex that Isn't. Looking at the best traditional farming methods and some mistakes imposed by Western technology, journalist *Henry Pelham Burn* suggests a wise blend of the old and new to increase Africa's food self-sufficiency. (Page 6)





What is a "Healthy" Environment for Children? Years of experience in developing countries convinces *Dr. David Morley* there are many simple, practical measures available to promote better child health despite the many problems posed by poor environmental conditions. (Page 11)

Children—An Endangered Species. Well-known economist and author, now head of an environmental institute, *Barbara Ward* fears society is doing everything to stunt the child's development and calls for more awareness and action to prevent this dangerous trend. (Page 16)





Piped Dream: Providing water for rural communities in Sri Lanka. The scarcity of fresh drinking water is a constant threat to child health. Efforts to improve this condition are described by Kenneth J. Somanader of Sri Lanka's Ministry of Defense and Foreign Affairs. (Page 19)

Will Help Come in Time for the Urban Child? Rural-to-urban migration is a world-wide problem, but more serious in developing countries where most migrants end up in slums. Journalist Agostino Bono writes of resulting hazards for children and possible solutions. (Page 23)





A Better Life for Bobo. Dramatic changes occur when fresh, clean water supply comes to a village for the first time. Martin Beyer, UNICEF's Advisor on Drinking Water Programmes, tries to convey a mother's newly aroused hopes for a better life for her children. (Page 27)

Cover photograph by Bernard Pierre Wolff

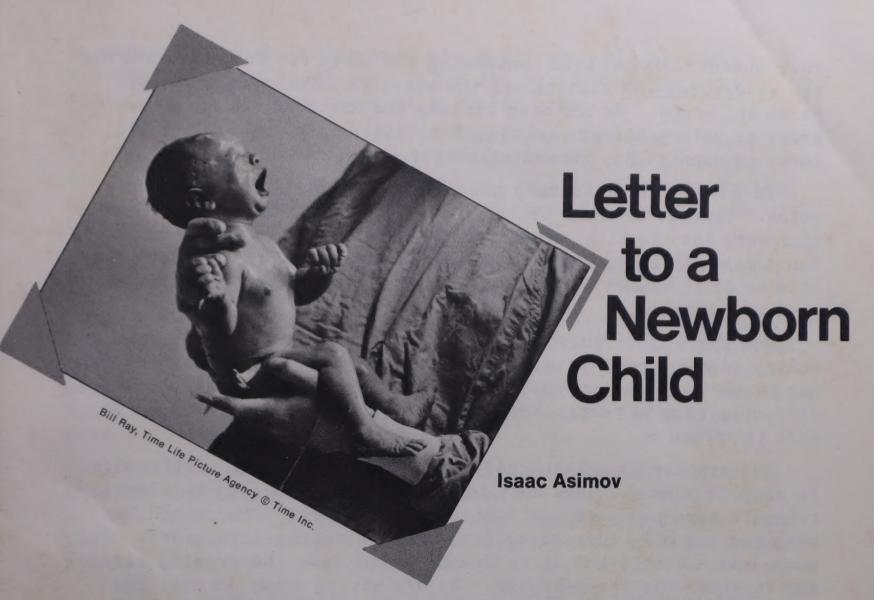
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Welcome, little child, to the four billion! That's how many there are of us on this planet -- four billion.

We haven't always been four billion. Only fifty years ago or so, when I was born, there were only two billion people on Earth. The population has doubled since then, and it is increasing even faster now.

About one hundred and twenty million people were born on Earth this year, and you were one of them. Of course, about forty million people died this year, but that still means that the world's population went up by eighty million this year. And it will go up another eighty million next year, and eighty million more the year after. In fact, the rate of increase will itself go up from year to year.

By the time you are thirty-five years old, there will be <u>eight</u> billion people in the world-unless something happens to prevent the increase.

One thing that could happen is that the rate at which people die will go up. That may very well happen, for mankind, in order to support his vastly increasing numbers, has been destroying his

Associate Professor of Biochemistry at Boston University's School of Medicine, Dr. Asimov has published 158 books covering such diverse topics as science fiction, mysteries, every branch of science, history, literature, humour, biography and a variety of other subjects.

environment. He has been ransacking the Earth for food, destroying the wilderness and killing off the wildlife to make room for his herds and crops. He has been rifling the Earth of its resources in order to obtain energy, metals, fertilizers and material of all sorts to support his expanding number.

We have managed to keep pace with the population up to this point. Indeed, the four billion today are better off on the average than were the two billion who were on Earth when I was born—but it isn't going to be possible to keep pace any more. We have only been able to do it so far by continuing to destroy the very environment that supports us.

Now there is an energy crisis. It is difficult to get enough energy to keep everything going faster and faster and faster. It has become difficult to keep the farm machinery in operation and difficult to make fertilizer cheap enough for poor nations to be able to afford it.

The weather is getting bad, too. Our industrial civilization is pouring more and more dust into the atmosphere, and this dust reflects more and more sunlight back into space. The Earth has been cooling off, therefore, for the last thirty-five years. Not much-just a little-but it is enough to cut down the growing period and to alter the storm-tracks. We are having droughts now, and crops aren't doing as well as they once did.

In addition, our industrial civilization produces pollution of all kinds that is helping to ruin the environment by poisoning the soil and the sea and thus destroying, little by little, the living creatures on which we live.

This means we will not be likely to increase the world's food supply in the coming years, and yet the world's population is still going up. Since we are already having trouble feeding the people of the world, we can be pretty sure that there are going to be famines in many parts of the world in the years ahead.

The nations that will be the first to suffer are those that are poor and already near starvation—and it is in just those nations that the population is going up most quickly. The chances are about 85 out of 100 that you were born in a poor nation—in Bangladesh, in India, in Laos, in Chad, in Malawi, in Haiti. That means you are likely to be dead in a few years. Even if you live past childhood, you are likely to be hungry for all the years you spend on this planet.

And in the mad scramble for food on your part and on the part of billions of others, the people of Earth will further damage the world they live in, and begin to fight each other over scraps. As things grow worse, the death rate will go very high, and all of civilization may crash. It could mean then, that if you

do manage to reach middle age, you may find that the world is a savage place in which you, and a few million others, are living among the vast ruins of a richer time.

Is there anything that can be done to prevent this? Well, if we don't want to keep down the population by killing off people rapidly through famine and disease and war-the only alternative is to see to it that fewer people are born. In general, the birth-rate must go down.

You are a sweet and lovable child, as all children are, but there are too many of you. There must be fewer of you.

The birth-rate may decline as people come to understand the deadly and present danger of population increase. In poor nations, the birth-rate may decline if the standard of living can be made to rise. (For that reason the rich nations must do everything they can to help the poor ones-for their own selfish sake.)

If the birth-rate goes down and if the population ceases to grow and even begins to decline; if we can have a world without war and irrational conflict; then human beings can perhaps turn their vast knowledge to the task of solving some of the enormous problems they have created.

Some of those problems have been created by the very technological expertise we have developed, and then unwisely used, but perhaps we have learned our lesson.

Wisely handled, we can use a still-further-advancing technology to prevent and reverse pollution, develop non-polluting industries, preserve the beauty of nature, and the cleanliness and purity of air, water and soil. We can learn to conserve the limited resources of the world and distribute what we have more fairly so that as many people as possible can enjoy comfort and security. In a happier world, the threat of nuclear war may disappear, and new energy sources will be developed that will remove the threat of nuclear contamination.

It might be a better world eventually, after all-if not for you, then for your children's children. And with luck, you will be one of those who, when you grow up, will contribute to this.

We who went before you, left the environment worse than we found it, but perhaps you, and those born along with you, will Laac Comov leave it better than you found it, so that the human race and the world it lives on can be saved.

And if that is so, then welcome indeed.

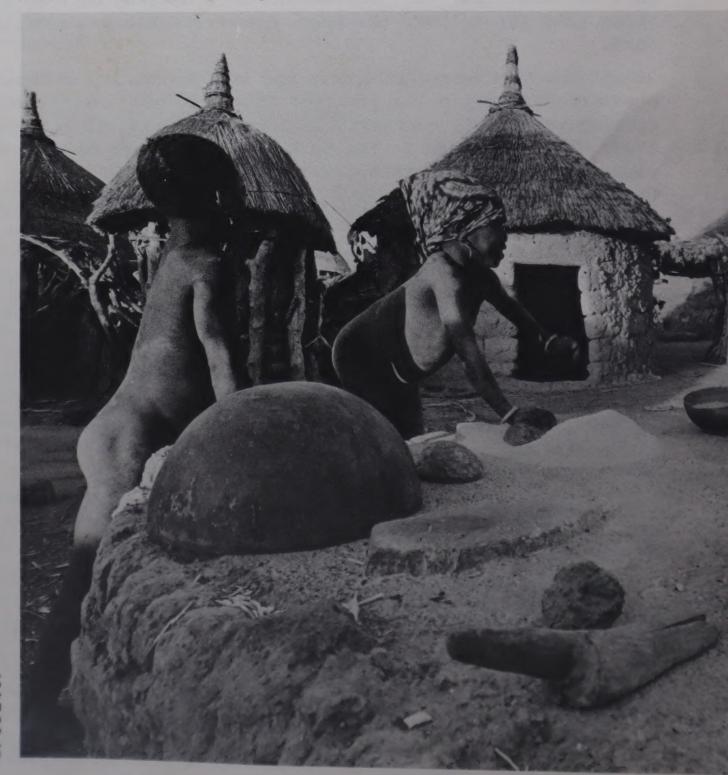
AFRICA'S FOOD: the inferiori

Henry Pelham Burn

Africa is being drawn slowly but surely into a food crunch from which it will be more and

Henry Pelham Burn is a free-lance journalist who has traveled extensively throughout Africa.

more difficult to escape and whose end result will probably be the destruction of the very source from which people draw sustenance, the land itself. Africa's children, and their children, will bear the brunt of the consequences of decisions taken now.



Children grinding millet, a relatively good source of protein. But, in Upper Volta poor soils and unpredictable rains make it hard to provide enough food to subsist. (ICEF 6484/Wolff)

omplex that isn't

The logic of the situation appears inexorable: with population doubling every twenty-five years, there are more mouths to feed, which means growing more food by utilizing higher technology, thus putting greater stress on the earth's ecological resources, with, in the long run, di-

minishing productivity. And all the while virtually mortgaging the continent to the countries and companies which control agro-technology and the minerals on which it thrives.

New technology questioned

This situation has been building since the end of World War II, but only recently with more awareness of environmental implications of modern agricultural techniques, has its effect on development pioneering begun to be questioned. Indeed the very meaning of development was implicit in visions of fields of fertilized wheat ripe for the large mechanical harvester, and tractors ploughing deep to turn the primaeval sod.

The trend, meanwhile, has been reinforced in some places by a dependency-mentality on alien foods fostered over the years by well-intentioned aid agencies, national and international, so that Africa could be said to have developed a nutritional inferiority complex. This has not only created dependence on supplies which could not be maintained indefinitely, but led people to think such foods indispensable to good nutrition, hampering efforts to produce local foods which could be equally effective.

Experts have pinpointed two possible measures of the level of development of any society. One is the degree of control achieved over the environment; the other is the degree to which society has adjusted to its environment. Traditional African society ranks high on this scale, having managed ingeniously to adapt to a very difficult environment with very limited material resources. Obviously, the tribal days are gone for good. Therefore, adjustments should be made towards new systems better than those that now exist.

Co-operating with nature

The problem is that since World War II, the approach to the food and nutrition situation of African children has been basically non-ecological with shipments of surplus foods, introduction of food technology not suited to rural

areas of developing countries, home economics instruction based on Western models and the decline of breast feeding as a result of urbanization.

At the best of times, agriculture is just a way to work co-operatively with nature by growing selectively a few kinds of plants instead of letting natural selection take over. This process cannot be pushed too far without damaging the ecosystem. "Unless we use the ecosystem as it has been set up, there will be no more progress," says Dr. Reuben Alembo, a plant biologist with the University of Nairobi. He advocates more patience with mixed cropping, a traditional way of growing several supplementary crops together, and warns against the current trend towards monoculture—maximizing yield from a single crop, as in the Green Revolution.

Ecological risks

Monoculture can produce a spectacular amount of food over a limited period, but the environmental costs are also spectacular and last longer. The specially bred high-yield varieties of cereal need propping up with massive doses of fertilizer, weedkiller and pesticide. Though bred for disease resistance because of their narrow genetic base, if they should fall

foul of some unforseen blight, the whole crop could be wiped out, as almost happened to the U.S. maize crop in 1970. The risk is specially big in tropical climates. There exist certain crops, though, such as oil-producing palm, which a change in genetic make-up renders high-yielding without the need for liberal dollops of fertilizer.

High-yield crops developed so far also need more water than other types. The deterioration in soil structures resulting from chemically intensive mechanized farming can lead to a loss in the efficiency of drainage systems and in the effectiveness with which soluble fertilizers can be used. At the same time, over-consumption of groundwater for irrigation can lead to a lowering of water tables that may jeopardize the future of farming in the whole area. There may also be health hazards with irrigation.

In mixed cropping, legumes grown along with other crops can build up protein from atmospheric nitrogen and restore a balance of nutrients to the soil. This nitrogen, however, deteriorates very quickly if the soil is exposed to the sun and loses its cover.

Advantages of traditional farming

Roots and tubers build up starch from atmos-

Boys are beating millet in the traditional ways of the African small farmer who, over the centuries, has learned to adapt to his ecology. Too often, Western technology imposes modern measures which distort the existing environment. (ICEF 7024/Wolff)



pheric carbon dioxide and water and similarly make little drain on the soil, even helping redress the so-called "greenhouse effect". They are extremely efficient caloric producers.

There are often excellent reasons behind traditional farming methods which may seem primitive or lazy to Western-trained eyes. It is often taken for granted, for instance, that planting single crops in neat rows is the only way to do it. But if sowing has to be done quickly to catch temperamental rains, this becomes a complication.

On sloping or hilly land the channels between rows might turn into torrents of water after a heavy storm, carrying the soil away. Interplanting beans among a taller crop like maize not only makes full use of soil (and nitrogen fixation) but provides physical shelter from storms and even helps check pests which might run amok in single planted crops.

It is often forgotten that African agriculture was developed over centuries in inhospitable climates where mistakes reaped the ultimate penalty, whereas foreign agriculturalists have been studying the situation only for a matter of decades. Tampering with food practices means cutting at the roots of a closely knit cultural mechanism and throwing it out of balance.

The growing of cash crops is a case in point. It exposes the growers to the market system and high price structure and leaves them open to exploitation by the middle man, usually the Government which encouraged them to get into cash crops in the first place in a bid for more foreign exchange. A shift in diet usually takes place when, instead of growing their own, they buy food in the shops. The bought food, being different from what they are used to, requires different handling and storage. Milk, for instance, has to be refrigerated. Inevitably, the very young suffer first. Subsistence agriculture has its advantages.

From both an economic and ecological point of view, self-sufficiency in food, combined with maximum nutrient productivity seems the only logical strategy left for Africa. The emphasis should be on accentuating all that is best in traditional food knowledge and practice, and upgrading, rather than indiscriminately replacing that which seems bad. This means unlearning much of the "conventional wisdom" and approaching the situation with fresh eyes.

Instead of concentrating on finding out why 30 per cent of African children are malnourished, it would be helpful to gain a better understanding of why a significant proportion are reason-

ably well-nourished.

Reappraising subsistence agriculture

The first thing the Western-trained scientist sees in a subsistence farm is its apparently low productivity. But productivity is the relationship between what goes in and what comes out. The African small farmer gets a lot for what he puts in; he adapts to his ecology, whereas Western man imposes on his with chemicals, tractor fuels, etc., and basically distorts the existing environment, although much can be conserved through proper soil and water management and appropriate forestry practices. The traditional African attitude is one to build on, rather than throw over; it implies an acceptance of the limits within which development can start to take place.

Usually, subsistence agriculture is in fairly good balance with energy supply. The indigenous African foods are relatively easy to cultivate and can be combined into a nutritious diet.

As has been seen, many roots and tubers make little drain on the soil while giving high caloric yield per acre; millets and sorghums can survive and produce in arid areas where other cereals such as maize and rice will fail; legumes and oil seeds provide good yields of high quality protein; sesame, although low in certain essential amino acids, can provide the sulphur-containing amino acids; groundnuts can be a useful supplement to maize diets; dark green leafy vegetables are valuable sources of vitamins A and C, calcium and iron. And these are not foods which Africans have to be educated to like.

Protein and energy needed

The song and dance about the importance of high-protein products like eggs, milk, meat and fish would also seem to be overplayed. The body needs both energy and protein. If a starving child is stuffed with protein, he will use it partly to meet energy requirements.

Yet experts there are who still mindlessly hold out the promise of an edible utopia. Witness the following from the World Food Conference 'Proposals for National and International Action': "In Africa a campaign to eliminate tsetse fly would release an area larger than the total agricultural area of the U.S. and would make possible the production of 1.5 million tons of meat per annum."

Had any thought been given as to how this tsetse-free land would stand up under so many



A young Zambian baby thrives on a protein-fortified porridge diet. Hopefully, combining the best of traditional and modern agricultural approaches, developing high protein supplements and increasing nutrition education for mothers will be the best way to improve child nutrition. (ICEF 6237/Matheson)

cattle, or who would buy this expensive meat? Should not the emphasis be on obtaining nutrients at the lowest possible level in the food chain? Ruminant animals foraging on otherwise non-arable land, together with such fish products as are available, must be looked to as the major sources of animal protein.

As it is, there are probably 50 million pastoralists in Africa south of the Sahara. As secondary users of vegetation, they are much less efficient food producers than the cultivators. About half of the continent is desert or more or less arid grasslands and savanna unsuited to cultivation. Incidentally, a family that is dependent on camels can exist with a lower demand on the environment than if they subsist on cattle.

UNICEF's Food Technologist for Eastern Africa, Jim McDowell, talks in terms of growing cassava to feed schoolchildren in rural schools

but only if care is taken to ensure a balanced diet, including soybeans and other foods, because cassava provides little besides energy. He reckons that if a 200-pupil school grows an acre of cassava, there would be enough to give each child two hours supply of energy every school day to combat listlessness. Some, at least once, considered it nutritional heresy to encourage children to eat cassava, but there has been an increasing willingness to build on to this dietary element rather than preach against it.

There are other environmentally sound means of increasing food supplies besides improving farming. Spoilage after harvest is a big headache, whether from damp, disease or rodents and other animals. Simple, more effective means of drying and storage at the village level would help cut down the 20 to 30 per cent post-harvest losses, as estimated by the FAO, which are draining African food resources.

Combining best of old and new

The failure to project what will be the long term effect of man's stepping in to alter the scheme of things is perhaps the most serious shortcoming of programmes affecting food production in Africa.

In Egypt, for instance, the Aswan Dam prevents the annual flooding of the Nile and the replenishment of soil deposits. As a result, Egyptian soil is rapidly losing its fertility.

Even the siting of water wells in the Sahel, encouraging nomads to concentrate their livestock in fixed spots, has been partially responsible for the extent of the famine in that part of the continent by inducing overgrazing and the resulting extension of desert areas. Droughts have occurred there before, but never has the environment been so heavily taxed with people and animals. The Sahara is not moving south at 30 kilometres a year, as is often stated, but merging on a jagged front with these centres of overgrazing.

It is even claimed reliably that man's impact on the landscape has reduced the biological effectiveness of rainfall by increasing the evaporation rate, particularly where desert meets savanna.

All this, though, is not to conjure up visions of the Noble Peasant but to underscore the need for imaginative combinations of indigenous tradition and modern non-dependency farming techniques to improve the rural environment and ensure that the children's heritage reaches them intact.

what is a "healthy" environment for children?

David Morley

Meet Titi and Asa. Age? Both are three years old. Place of birth? The same African village. Parentage? Similar backgrounds for both sets of parents.

How then can one explain the striking differences between these two little girls, coming as they do from the same environment?

Perhaps we must first define what we mean by the word "environment". This is what the dictionary tells us:

"Environment: the aggregate of surrounding things, conditions, or influences, esp. as affecting the existence or development of someone or something."

What were some of the "conditions or influences" in the lives of Titi and Asa to account for the shocking disparity in their height, weight, state of health and mental alertness?

Dr. David Morley, Senior Lecturer in tropical health at the Institute of Child Health, University of London, worked in the Western region of Nigeria for many years and undertook a long-term study of children growing up in a village. He was the creator of the Morley weight chart, described in this article, which is widely used throughout Africa and Asia. Dr. Morley is the author of several books dealing with paediatric problems of children in the developing world.



Although both little girls are three years old and come from the same village, one shows the results of prolonged undernutrition and repeated infections so common in developing countries.

Let us look first at Titi, the fortunate one. Her mother breast-fed her successfully; there was little strife within her parents' families, and she escaped the ill-health brought on by so many childhood infections.

Asa was less fortunate. Her mother was undernourished; due to a depressive illness, breast-feeding did not go well, and her condition was made worse by her husband's death, which exacerbated the dissension between herself and her husband's family, leaving her without family support.

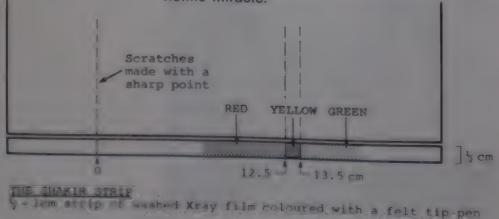
Later, when Asa's family was persuaded by health workers to send her to primary school, the teachers reported that she was "lazy". But her well-grown neighbour Titi went through primary school and secondary school with no difficulty whatsoever.

Through no fault of her own, Asa was the unfortunate victim of a number of "conditions" and "influences" which are all too common in the developing areas of the world: prolonged undernutrition and repeated infections and an environment in which there is little stimulation.

Is it a matter of luck?

Do we conclude, therefore, that a "healthy" environment depends entirely on chance, on the good fortune of being born to a healthy mother who is a member of a happy family?

Luck helps, of course, but fortunately today many more innovative and realistic approaches are being conceived, and simpler, more practical, low-cost measures are being tried out by the developing countries, which, hopefully, can provide better health, nutrition and education services to larger numbers of people and to encourage them to take a more active part in the improvement of their communities. In short, the ideas and the tools are on hand to increase the chances of creating a better environment for the vast majority of underprivileged children of the developing world, even without an economic miracle.



Easy to use growth chart

One such practical measure is a simple weight chart which can be easily used to help promote adequate child growth. Without repeated measurements, the most experienced children's doctor or nurse cannot detect the early stages of failure of growth. Such a simple growth card is kept by the mother and provides an indispensable tool for use in a comprehensive child-care clinic, such as the "Under-Five" clinics in existence in a number of countries.

Malawi provides an excellent example not only of how these clinics can be reproduced quickly and at low cost, but of how essential they are to improving the environment of under-privileged children in the developing world.

Within a period of four years, Malawi replaced 72 welfare clinics with 362 "Under-Five" clinics. As a result, half the children in the country were within relatively easy reach of comprehensive health services. By using the weight charts, their weight curves were plotted on a regular basis, providing significant clues to the rate of their growth and development. Zambia and Sarawak are two other countries using the same approach, with similar success.



A simpler tool: the Shakir strip

There is still a simpler method which can be used if one suspects that malnutrition exists. It is called the "Shakir strip" and is made of a piece of non-stretch material, such as an old X-ray film as in the figure above.



It is coloured in three zones with a spirit felt pen and when used as a measure round the middle of the upper arm of children of any age between one and five, is a most effective method of identifying poorly grown and undernourished children. Primary school children have been taught to use it with great success on the young children in their villages to help discover the proportion of malnourished children in their own communities. The simple way in which it can be used is clearly evident in the accompanying illustration.

"Shakir strips" can be mass-produced and can be used by groups in a community to identify the amount of malnutrition throughout the population.

More positive and broader goals

Although the success of using simple tools such as the growth chart or "Shakir strip" has been demonstrated, the sad fact remains that families who understand the importance of good nutrition and health care for young children are the exceptions rather than the rule throughout the developing world.

An enormous task lies ahead to change this situation. Not only must more communities develop better services for children, but they must train more workers to deliver these services to places where they are needed the most.

One encouraging sign is that instead of engaging in the more negative task of seeking out children with malnutrition, many health workers are pursuing the more positive approach of promoting healthy growth by encouraging adequate feeding, full immunization, early

Mothers are taught to use a simple chart, developed by Dr. Morley, to record a child's weight. These regular measurements help the doctor or nurse to detect early stages of failure of growth.

(ICEF 6638/Matheson)

^{*}Information on the production of these strips is available on request from Teaching Aids at Low Cost (TALC), Institute of Child Health, 30 Guilford Street, London WC1N 1EH.

treatment of disease, and better spacing of births.

Reaching young mothers

An interesting comparative study has been made of two communities covering a twenty-year span. In the rural African community, there is a birth interval of 34 months and after 20 years, a family of seven, and in the Brazilian community, a birth interval of only 17 months with 14 children after 20 years. In each, three different periods are compared—the pregnancy, the period the child is under five, when he is the direct responsibility of the mother, and the period when he is beyond that age and less dependent on his mother.

If we study the period such as the one after eight years of marriage, we find that the mother in the African community will have one or at the most two children under five, and each child will have a period of 31 months before she is again six months pregnant and thinking of the next delivery.

In the Brazilian community, the mother has to cope with three or possibly four children under five, and each child will have only 14 months before the mother's attention is distracted by the next pregnancy.

Research findings have confirmed the fact that children born at a short birth interval are more likely to become malnourished, will be physically smaller, have a higher mortality, and are likely to achieve less in their schooling. These facts should convince the people working in the field of family planning of the need to re-assess their priorities. Rather than placing too much emphasis on older mothers who already have a large family and trying to persuade them to limit any further births, there is a far greater need to concentrate on helping young mothers achieve an adequate interval between births.

Untapped sources for health workers

Everyone agrees that to build a better environment for children, many more trained workers are needed to work in the villages.

But where can these workers be drawn from? Now that the world fuel crisis has posed additional financial strains on their budgets, it is unlikely that in the next decade the developing countries will commit large expenditures on expanding or improving their health and nutrition services or training highly skilled workers to deliver these services. In fact, the reverse is

happening. Governments in financial difficulties are cutting down on social services.

Fortunately, recent experience has provided some hopeful signs that the solution seems to lie in drawing more extensively on the resources of local people who can be trained to become auxiliary and paramedical workers, and especially, part-time health workers.

Importance of part-time workers

Experience in several countries suggests that none of the present cadres of health workers are sufficiently in touch with the people they serve. The least well-trained member of the health team will have had six to seven years' formal education, with two to three years' specialized training. Girls who have received this length of training are likely to have problems in communicating with mothers who may be older than they are, but 80 per cent of whom are illiterate. Health workers are needed who are more in touch with the people. They are found in the "barefoot doctor" of China, the health promoter in Guatemala, the village first aid worker of Tanzania, or the social worker in India. These workers have several important features in common:

-They have already established themselves as farmers, or with other skills that are acceptable in the community, and they continue to practice these, working only part-time in the health field.

—Their training is part-time, in some areas one day a week, or alternatively in a season when there are few farming or other activities. This training is done with as little dislocation as possible from their family and community life, and does not involve a stay in a large city.

-They are not on any central payroll, but are recompensed by the community.

—They are selected by the community, which is encouraged to choose people whom it recognizes as being concerned to help the community rather than having any ambition to receive training for personal gain or so that they may work in the towns. They remain in touch with the desires and needs of the community and sympathize with and accept the local understanding of the approach to illness. They do not become one of "us", the health professionals, but remain one of "them", the people.

Once a Chinese doctor was asked what the committee in the community looked for in choosing their part-time workers (barefoot doctors). His reply was "they look for compassion".

Stimulating the mind

There is little disagreement about the important link between good health and an alert mind.

An interesting study being conducted in Cali, Colombia, has clearly demonstrated the effectiveness of mental stimulation at a very early age. Children are admitted to this study at the age of three and after two years of attending a kind of kindergarten designed to bring out the child's own potentials and to encourage him by group play and a wide variety of experiences, the changes produced by this stimulating environment are striking.

A whole battery of tests has shown that children who are both well-fed and stimulated can develop in their physical growth, intelligence and ability almost identically with elite children of the wealthy citizens of Cali or any other city. Similar studies made in other countries have revealed the same findings.

The challenge

From evidence gathered through this and other studies and from years of experience in the field, important lessons have been learned which provide new insights and new directions for future action:

—To ensure adequate physical and mental growth, better health and nutrition services and a stimulating environment must be provided for every child in the pre-school period.

—More workers in the fields of health, nutrition and education must be trained and, wherever possible, drawn from the same communities in which they will be working. Also, they must work together in close harmony so that all aspects of a child's development can be seen within a comprehensive and integrated framework.

It is clear that if nations want to show rapid development, they must invest more in services for children during their early critical years and less in the large hospitals, schools and universities, which are the traditional sources of "health" and "education".

Will sufficent recognition be given to the need for carrying out the practical and realistic measures which can help to create a better environment for the world's children? And will they be undertaken on a scale large enough to be of significant value to the underprivileged masses? Only time will tell whether or not this challenge will be taken up and dealt with successfully.



A stimulating environment at a very early age is essential in developing a child's mental alertness. Daycare centres provide a variety of experiences to help bring out a child's intellectual potential.

(ICEF 5985/Matheson)

CHILDREN - AN END

Barbara Ward

How are we to understand the environment and the child? The inner environment of biological health and full creative mental development? Or the outer environment of stimulus, culture and beauty, of shared affection and civic security? Of course, we mean both. We also know that today both are at risk for millions upon millions of the world's children.

It is a truism—but still true—that famished children with insufficient protein, vitamins and minerals—as well as calories—in their diets in the critical first years of existence cannot, by definition, ever reach full humanity. No amount of remedial feeding later on, even supposing it were available, will restore mental alertness, the capacity to learn, the creative spark to those who missed the irreplaceable growing point of adequate nutrition and the chance for proper development in early life.

In the documents prepared for the World Food Conference in Rome in 1974, the estimate was made that perhaps 230 million children are malnourished and thus risk the irreversible abridgement of their full humanity, of their inner environment of physical strength and mental capacity.

A small sacrifice

The report also estimates that for \$20 a year for each child, the extra component of needed calories and protein could be made good. If we take the world's wealthy people—the old industrialized wealth of the West, Japan and Russia, the new oil wealth in oil-producing countries with relatively small populations and wealthy groups in developing lands of all kinds—the number of people is coming up to a billion.

The cost of a policy for a protein and calorie supplement for the needlest children is, again roughly, \$460 million. About 50 cents a year

World-renowned economist, author and lecturer, Barbara Ward, is currently President of the International Institute for Environment and Development in London, England. Prior to her present post, Barbara Ward was Albert Schweitzer Professor of International Economic Development at Columbia University in New York for a period of five years.



from each citizen in wealthy lands and groups would provide that supplement. It is hardly an overwhelming burden, least of all for countries where the expenditure on armaments can cost each citizen about \$100 a year.

The "outer environment" covers a much wider and much less calculable problem. The likelihood that the most important external need may

IGERED SPECIES



be love, security and identity achieved within a happy family is borne out by the numberless children in every type of society who have survived unimaginable strain and hardship because of the primordial support of paternal and fraternal love.

We cannot legislate for this kind of security and affection, but a society which does not give

all the needed kinds of external support may find that it has lost in violence, juvenile delinquency, mugging in the streets and crowded prisons most of the money it thinks it saves by failing to provide good housing, decent neighbourhoods, lively, well-taught schools and a general ethos which supports the child's need for family stability.

In destroying the beauty of nature's environment, society is threatening the well-being of children by creating unhealthy slums, polluted air and possible nuclear fall-out.

(Photo/B. P. Wolff)

Unhealthy slum environment

These needs become all the more urgent and tragic as the world floods on towards full-scale urbanization. Every year, in most developing countries, population grows by more than two per cent, cities by more than four per cent, the great urban conglomerations by twice as much again.

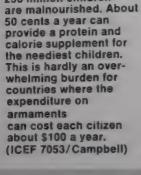
Calcutta, Jakarta, Manila, Caracas, Lagosthey drive on at uncontrollable speed towards and beyond the ten million mark. And in such places, a third and more of the population are likely to be squatters, living in tarpaper shacks or huts made of discarded petrol tins and to be working, if they are lucky, perhaps a couple of days a month.

These are perhaps the worst external environments ever devised for children. They can and are redeemed by family love and tenacity. But virtually everything that society provides is designed to stunt the child's development, check natural growth in awareness and intelligence and turn creativity into bitter and active resentment.

If it is true that human nature itself developed its imaginative powers under all the stimulus of the planet's infinite variety-forests, plants, birds, animals, scents, flowers, changing skies, in a word, the full environment of total creation -how can we expect the essential creativeness of man to be preserved when the only sights are miserable buildings, the chief sounds, the roar of traffic, the pervading smells, untreated sewage and industrial effluents?

Even in wealthy cities, the monotony and isolation of blighted communities or "high rise" living is producing a mixture of apathy and violence. What are we breeding in the future megalopolises where millions of children are to grow up with bad shelter and uncertain employment in an environment compounded of all the worst in 19th Century slums and pollutions combined with the shanty towns and chemical -and possibly nuclear-fall-outs of the 20th?

We could be preparing for such a combination of despair and violence that our whole global society may be at risk.



Estimates reveal some

230 million children



PIPED DREAM: Providing water for rural communities in Sri Lanka

Kenneth J. Somanader

In Sri Lanka (formerly Ceylon), one of the world's newest republics, the supply of fresh water poses a perennial problem. It is ironic that in an island 400 miles by 300 miles and boasting some of the finest bathing beaches in the world, pure drinking water is one of the most difficult commodities to come by.

Go to Udappu, for instance, a sleepy little old-world town on the western coast of the island, some 65 miles from Colombo, the capital city, and you will witness an appalling sight. There, at least twice a day, Tamil-speaking

Kenneth Somanader is Assistant Director of Publicity of Sri Lanka's Ministry of Defense and Foreign Affairs. He is well-known as a free-lance writer and photographer, and was for several years on the editorial staff of the Times of Cevion.

Pure drinking water is a scarcity in Sri Lanka. UNICEF is helping the Government provide water supply schemes in 100 rural areas, such as Moratuwa where this underground reservoir is being constructed. (ICEF 7023/Wolff)



Hindu women, skilfully balancing water-pots on their heads, trek miles to the water-bearing sands near the sea coast and laboriously scoop out shallow pits, two to three feet deep. And while they engage in the latest village gossip, they watch the fresh water seeping slowly into the bottom of the pit. Using coconut shells with long handles attached to them, they then ladle out this water with a dexterous motion at which they have become adept over the years. Ponammah, the veteran in the group, has in

65 years chalked up several thousands of walking miles to her credit and recalls that her ancestors have been obtaining their supplies of fresh water in just this same way for centuries. As she recounted a tale of the old days, she families. tilted from her long spoon a sample of water

into my cupped hands. For her and the others it was indeed like nectar from the gods.

The village of Udappu, however, is not an isolated case. There are 22,600 rural communities in Sri Lanka, but only a very small percentage of the population in these communities is served with pipe-borne water. In the majority of cases, the pathetic search for water is a daily ordeal-the crossing of dry river beds in search of pure water; the homeward trek laden with water-pots through jungle or rice field; or the protracted wait for the daily ration.

Water for sale

In Madurankuliya, 72 miles from Colombo, it is a common sight to see womenfolk, many of



Many village women must rely on water vendors for their supply. The water is probably polluted and the price too high for most (Photo/K. Somanader)

UNICEF helps over 70 governments develop safe water supplies

Fresh water is a commodity that many of us just take for granted. It has always been there. Just turn on the tap, and we can get water to drink, to use for our food, for our cleanliness, for our comfort. But, for more than two-thirds of the world's inhabitants, it is not so. Only a small part of the world's supply of fresh water is readily available for most of the world's people, especially those living in the developing countries.

This unfortunate situation is a matter of deep concern, for lack of access to safe, clean water poses the most serious health hazards to children, families, entire communities. Consider the fact that, by and large, the daily intake of fresh, clean water needed to keep the body fit and functioning is about one and a half gallons. Add to this an absolute minimum of ten gallons more needed for body hygiene and other household uses.

Increasing numbers of governments are recognizing the fact that fresh water supply is indispensible not only as a basic health measure, but as the foundation for any development of the community itself.

Over 70 governments have requested aid from UNICEF for programmes to develop water supply for human consumption, especially in marginal rural areas. Wherever possible, this effort is linked with other programmes to provide safe water to households, schools, dispensaries, health centres, school gardens and small scale garden farming.

In 1974, the annual allocation from UNICEF funds and funds from bilateral or non-government sources, channelled through UNICEF, amounted to about US \$12,000,000 in the form of

equipment such as drill rigs, casing, pumps, water tanks, pipes and fittings, vehicles and also in the form of funds for training of national operation and maintenance staff. The inputs by the governments themselves in these programmes are many times larger than this figure. There is a close co-operation with other organizations, especially with the World Health Organization.

Water supply is only part of environmental sanitation. Another important activity is that of excreta disposal with the construction of sanitary facilities such as latrines. An increasing part of funds goes into education for villagers to encourage the proper use of sanitation facilities and to stimulate their active participation in the programmes.

In 1974, it is estimated that about 49,000 water supply systems aided by UNICEF will benefit over 8,800,000 people. One of the more sizeable UNICEF-assisted programmes is that in India, where about 14,000 wells have been drilled since 1970. In Bangladesh, the goal is to sink and rehabilitate 255,000 tubewells. Significant programmes are also underway in Pakistan, Afghanistan, Vietnam, Yemen, Ethiopia, the Sahelian drought area and Bolivia.

A well can be brought down into the soil for as little as about \$150 as for example in the flood plains of Bangladesh. In other parts of the world, the costs can be much higher, but everywhere the cost per villager is very modest, and the results in terms of health and welfare, particularly for the women and children, are tangible and can be achieved within a very short time.

them with infants in their arms, waiting patiently under a tropical sun for the water vendors to come by. These vendors collect the so-called fresh water from exposed pools and reservoirs miles away and transport it in empty oil barrels on carts drawn by bullocks. Each vendor's barrel contains about 45 gallons of water, and the water is dispensed to the villagers at the rate of about five cents per gallon. According to Mr. L. Ilangakoon, a number of the Madurankuliya Village Council, the villagers suffer grave hardships, especially during times of drought when the price of water soars even higher. The watervendors, he said, made their money as they were each able to transport at least five barrels of water daily into the village. But there were only about five to six vendors plying this trade, and this number was insufficient to meet the needs of the 1000 inhabitants in the village.

In Karaitivu, in the Pomparippu Village Council area 98 miles from Colombo, the situation

is no better. The Chairman of the Council, Mr. M. N. M. Cader Saibo Marikar, told me that the 1500 inhabitants in his area had to be satisfied with water from wayside ponds for their domestic needs. This same water was used for bathing as well, and was thus subject to severe pollution. In one section of his village, he said, the village folk had to obtain brackish water-the best available - from a neglected community well, using a rustic well sweep. It was to this same well that cattle came to quench their thirst, he added. A pilot survey in Karaitivu revealed that only 40 of the 301 households in the village boiled their water before drinking, and 56 houses strained the water, while 205 admitted that they adopted no safeguards.

Similar situations exist in numerous other Sri Lanka villages. In Hambantota, 150 miles from Colombo along the southern coast, I saw villagers collecting their drinking water from a wayside pond where buffaloes were wallowing in the mud.

Water and disease

"The importance of a pure water supply cannot be over-emphasised," Dr. T. Munasinghe, Assistant Director in charge of Health Education and Publicity in Sri Lanka's Department of Health Services, told me. He listed diseases like infectious hepatitis, diarrhoea, dysentery, worm infestation and typhoid which were taking their toll in the island, especially among the younger age-groups. He observed that one out of every four hospital beds in Sri Lanka was occupied by persons with water-borne diseases. Apart from the common water-borne diseases, poliomyelitis and even cholera could be traced to an impure water supply, he said. He added that 30 per cent of persons receiving indoor treatment and 40 per cent of those receiving outdoor treatment in the hospitals of the country were those who suffered from water-borne diseases.

The Government of Sri Lanka has been aware of this problem but its rural water supply schemes have been hampered by a lack of foreign exchange to import adequate quantities of water pumps, machinery, pipe-lines and other equipment to service these schemes.

The role of UNICEF

Much water has flown under the bridges of Sri Lanka since these schemes were drawn up, and UNICEF has earmarked one million dollars to assist the nation by providing the required equipment. The Belgian National Committee for UNICEF has contributed \$425,146 of this amount to help implement the rural water supply programme in Sri Lanka.

The aim of the project is to provide water supply schemes in 100 rural areas over a period of seven years in five phases, so that these rural communities would have clean piped water for drinking and washing purposes. Hopefully, the availability of fresh clean water will help to reduce the incidence of the water-borne diseases in the country and to raise the general health level of mothers and children. UNICEF will provide the piping, fittings and other materials required for construction.

Construction work has already been completed at Weeraketiya, in the far south of the island, and it was formally commissioned by the Sri Lanka Prime Minister, Mrs. Sirimavo Bandaranaike, at a brief ceremony at Weeraketiya on February 8, 1975. A tablet, bearing an in-

scription in Sinhala, the official language, now stands sentinel over the Udukirigala irrigation reservoir which feeds the scheme, to mark the inauguration of the first of these UNICEF-aided water projects in Sri Lanka.

In Karaitivu, where the present population is 3100, a 5000-gallon-capacity water tower has already been built to supply 22,500 gallons per day to 4,200 people. In Madurankuliya, too, the Civil Engineering Works have been completed, and the scheme will be commissioned once the pumps arrive and are installed.

The 100 rural communities which are eventually to benefit in Sri Lanka have been selected on a national basis, considering that there are 22 administrative districts and 145 electoral districts in the country. The intention is to obtain the maximum demonstrational effect. Fifteen schemes are being implemented in the first phase, 18 in the second, 22 in the third, 22 in the fourth and 23 in the fifth-making a total of 100 schemes. The Regional Engineer in charge of planning at Sri Lanka's Department of Water Supply and Drainage (now the National Water Supplies and Drainage Board) pointed out that the local cost of the entire project was Rs. 16 million (about US\$ 2.5 million) of which the Sri Lanka Government had borne half as an outright grant. There was community participation in the programme as each of the Village Councils that would benefit had agreed to bear the other half of the cost of its respective scheme. To help those communities which did not have funds readily available, loans repayable over a period of 35 years were being given by a government lending institution called the Local Loans and Development Fund. The households benefiting from the scheme would pay a water-tax which would be negligible and, in any case, less than what they were now paying the water vendor!

Mr. V. Parameswaran, Senior Waterworks Engineer in charge of construction, said that some of the schemes would be gravity-fed schemes while others would involve abstracting water from ponds and rivers and purifying the water. Some of the schemes would involve taking water from shallow wells and deep bore hole wells.

The villagers meanwhile are keeping their fingers crossed that their respective areas would soon receive pure water, and that good health and all the other attendant benefits would flow from it.



Will help come in time for the urban child?

Agostino Bono

The other boys watch as Juan ties the rags together into a tight ball. As he gives it a test kick, puffs of black smoke start settling over the bumpy dirt area serving as a makeshift soccer field. By the time sides are chosen, the black smoke comes in steady clouds bringing with it the unmistakable stench of garbage.

Agostino Bono is a free-lance journalist living in Lima, Peru.

This is an everyday affair for Juan and his young friends because the place where they play is next to a garbage dump which holds the refuse of over 100,000 people living in this shanty town in one of South America's largest cities.

Playing and living under the stench of garbage is commonplace to Juan. His home, since the day he was born, is within 100 feet of the garbage dump. Juan probably doesn't know about the scientific hazards of polluted air, but he is aware that, "the air smells fresher in other parts of town. Here, it is harder to breathe."

As for Juan's family, they know only too well about the fire hazard of living too close to a garbage dump because shanty homes are made mostly of flammable material such as straw mats, wood and cardboard.

"Once there was a strong wind, and it brought flaming cinders right to our door. Good thing my father and I were home and saw them right away. We put them out before sparks could reach the house."

Juan's parents have joined with other residents to hire an old man from the community to watch the dump and keep the fire under control. His job is to burn enough garbage each day to make room for tomorrow's load.

More migrants, more slums

It was not this way 20 years ago when the first families—some 400 of them—settled in this area. They built their simple homes a safe distance from the site they chose for their garbage dump. But, as waves of new rural migrants came—and continue to come—to the area, more houses were built which inevitably got closer and closer to the garbage dump, creating an environmental hazard for all the people living in the vicinity.

The shanty town community was not planned by city officials, but it just grew by leaps and bounds as more and more squatters arrived from rural villages and laid claim to the vacant land. Squatters cannot legally pressure the government to provide them with social services until the lengthy process of establishing legal title to the land, through de facto possession, is completed. This often takes upwards of 10 years.

Although rural-to-urban migration is a world-wide phenomenon, it creates the most serious problems in the developing countries of Latin America, Africa and Asia, where most of the migrants end up living in slums and shanty towns. Over 50 per cent of the world's population is expected to be urban by the year 2000, but in Latin America the prediction is that the urban population will rise to 60 per cent by the end of 1975.

Hazards for children

Child population will double within 10 years in the slums and shanty towns of the developing world. This means more children like Juan will

be growing up in unhealthy environments, living next to a garbage dump, or in a home without running water, or in a community lacking sewage, or in a tropical climate where, for at least three months of the year, heavy rains leave huge pools of stagnant water as breeding grounds for microbes and parasitic worms.

A recent survey in eight developing countries showed that 90 per cent of child deaths could be prevented by better water systems, environmental sanitation and sewage disposal, but unsanitary conditions are only one of the hazards facing a slum child — albeit an important one. Poor education facilities, malnutrition and lack of economic opportunities (unemployment and under-employment) are among the other major problems faced by the people living in the slums and shanty towns of developing countries.

Need for an integrated approach

These problems are so tightly interwoven that they cannot be solved by attacking just one of them. As one official put it:

"How can we expect people to practice good nutritional habits if they do not earn enough money to buy the right foods? How can we expect children to go to school—even if we provide them with one next door—if they have to go out and earn money in order for their family to maintain a subsistence living? If we improve sanitation, but the child remains undernourished, how can we expect him to become healthy?"

Fortunately, social planners are beginning to recognize the fact that any effort to improve life in urban slums must be based upon a comprehensive plan embracing many factors.

A good example of the many interrelated elements that must be taken into consideration can be found in the plan now under preparation to provide UNICEF aid to children in the slums and shanty towns of Guayaquil, the largest of Ecuador's two major cities. With a population of about 900,000 to 1 million people, about half live in slum areas.

In co-operation with the Government of Ecuador, a 3-year plan for the period 1975-1977 is being developed to present to UNICEF's 1975 Executive Board Session for approval. The projected amount of UNICEF aid is the equivalent of \$1 million for equipment, supplies, training and vehicles to complement a much larger Government effort to deliver integrated and complementary services in an improvement programme



Unsanitary living conditions in the world's slums take a high toll in child death and disease. Many countries are trying to improve environmental sanitation and sewage disposal in their overcrowded urban shantytowns.

(ICEF 6362/Wolff)

covering employment, health, nutrition, housing, sports and recreation and community development. A high degree of community involvement is foreseen in each element of the programme, in addition to the participation of other members of the United Nations family.

Slum dwellers are self-starters

The eagerness of the people to take part in any plan to improve their communities is one of the most important ingredients in any successful effort. As a matter of fact, in more instances than not, the impetus for improvement and Government action usually stems from the slum dwellers themselves.

For example, what happened in Juan's community is typical of what goes on in similar slum areas throughout the developing world. When he was born, his house was one large room completely composed of straw matting. By the time Juan was 10, his father had saved enough money and materials to extend the house to two rooms, all of wood. Since then, a third room, also of wood, has been added so the older girls can have their own bedroom. Juan proudly notes that he helped construct the latest addition.

Most of the work was done by Juan's father, aided by other men from the community. In return, Juan and his father have helped three neighbours during the past year to build extensions on their homes. Over the years, men of

the community have also volunteered their services on Sundays to help in the construction of a school and small community centre.

"With even a minimum of encouragement, and sometimes in the face of strong official opposition, families living in slums and shanty towns are willing and able to improve their social, economic and physical milieu," stressed a recent UNICEF study.

A long way to go

UNICEF is currently aiding, or planning future aid, for integrated projects to improve slum areas in Colombia, Ecuador, Egypt, Hong Kong, India, Indonesia, Kenya, Pakistan, and Zambia. But the potential for UNICEF assistance to children in slums and shanty towns has only begun to be explored.

Much work remains to be done in defining practical measures to be incorporated into UNICEF-aided projects related to urban community development. Better ways must be found to improve health, education and other services benefiting children, to promote extensive use of auxiliary para-professional personnel recruited from among slum and shanty town dwell-

ers, and to unlock the hitherto wasted resources of slum youth by providing pre-vocational and vocational training not only to help equip them for better paying jobs, but to increase their opportunities to participate in the development of their communities.

No one expects that the environmental handicaps of slum life will be overcome in a short time. The problems are so overwhelming that it is easy to become discouraged about the future. As one urban planner said: "If the cities are unable to absorb today's rapid migration, how can we expect them to absorb future increases?"

But even though progress may be slow, increasing numbers of social planners are calling for accelerated action. "The time to start planning is now", a UNICEF officer stressed. "The few experiments and projects being tried now by governments and international agencies simply are not sufficient. We need to be more aggressive."

Perhaps if a solid foundation is established now, the children of the next decade may find that social improvement is beginning to catch up to the problems.

Mexico's Model City: A unique plan to meet an urgent need

In the new city of Cuautitlan-Izcalli, Mexico is taking a bold step forward in urban planning which, hopefully, will create a healthier environment for a projected population of 1½ million people.

Getting away from the "dormitory town" concept is the main distinction of this unique effort. The plan is to build a self-contained unit, so arranged that no resident need spend more than 10 minutes to travel to work. It is a city where, to a large extent, the bicycle will replace the motor-car and public transport will feed into the mass rapid transit system.

The aim is to create a city which will counteract the present unbalanced growth pattern in a country of 50 million, where 20 per cent of the people now live in the metropolitan area of Mexico City. The need for more and more mobility to cope with this mushrooming complex raised the spectre of greatly-increased pollution, valuable time spent on travelling to work and lost to rest, recreation, education or family life.

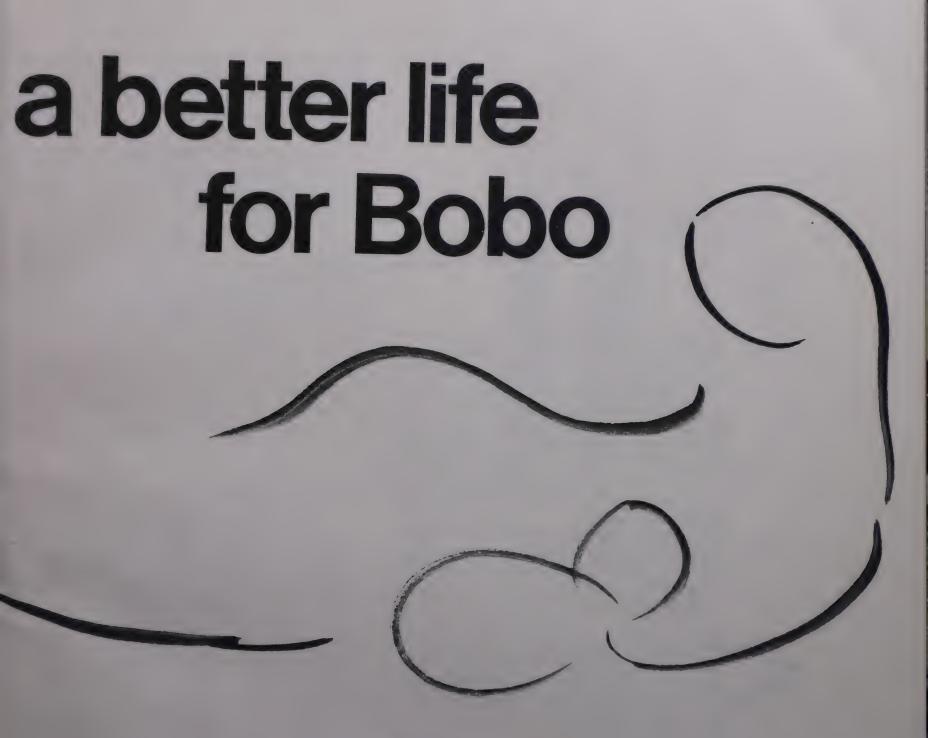
The Mexican Government gave its blessing to a policy of drastic decentralization, because it realized that if further development around Mexico City continued, the laws of supply and demand would strain even further the resources of the city's environs which are so unsuited to human settlement—its arid ridges and unhealthy swampland. Will the new model city of Cuautitlan-Izcalii act as a magnet to draw off much of Mexico City's excess population? Government planners hope the answer will be an enthusiastic "yes".

Since its start in 1972, this well-planned city now has 82,000 residents, with a university already serving 3,500 students. New industries are going up, simultaneously with housing and matching services.

With the cost factor uppermost, the plan has been to develop in stages called "bands," once money is available. Each band contains its own residential and industrial areas plus a segment of what will become the Urban Centre. Completion is scheduled for 1982, when the maximum population is envisaged at 1,600,000.

The site was carefully chosen for ecological reasons, with adequate drinking water and suitable terrain for construction and communications. Lakes and wooded areas are being preserved and other improvements are being added. The community itself is actively participating in creating new forests, lakes and roads designed to regulate rainfall and drainage, and thus conserve the necessary moisture.

In the words of the architect, Mr. Roque Gonzales, "In designing each element of the city plan and of its relationship with its regional setting, it was sought to make a city for living, a humanising city, establishing a harmonious relationship between the natural and man-made environments; designing a clear and simple structure, that besides meeting efficiently its economic functions, would facilitate the orientation and understanding that the inhabitants have of their city."



Martin Beyer

How does a mother feel when the age-old customs of her life are dramatically changed by the introduction of modern technology in her village? Martin Beyer, UNICEF's Advisor on Drinking Water Programmes, has met and talked with hundreds of women throughout the developing countries where his work has brought him into close contact with the villagers. He has been deeply moved by their sense of excitement when they see fresh, clean, readily available water supply in their villages for the first time. Through the words of Nadi, who could be any woman from any village, he has tried to convey their feelings and newly aroused hopes for a better life for their children. (Drawings are by Marion Farwell.)

I am Nadi. I lie in the dark of my house, mine and my family's. My husband, Toru, went to see his brother in the big city. Now I am alone, awake in the night and listen to my little boy, Bobo, sleeping soundly at my side. How it all has changed since I was a small girl, myself. Life in our village was quieter then. Everything used to be decided by the men and mostly by the old town chief.

The big change came when the Government people visited our village. They helped form a village council. They taught us a lot of things. Not only the men, as it used to be before, but they told the men to bring the women. They taught us how to grow foods, vegetables and fruits we never had known before.



Then one day they asked us where we used to get our water from. Oh, we went with them to the river, two hours walk away, and told them that in the dry season we went out in the dry river bed. There we dug pits. Small water soake into the pits. But it was muddy, and we and our children were more sick than ever that time of the year. The Government men shook their heads and said this is no good, we have to do something about it. They wrote things in a book and then went away.

Some weeks later there was a new man. He brought maps and some strange instrument.

For a whole day he walked up and down through the village and around it, peeping at his instrument, and now and then stopping to make a note. Then he asked to speak to the village council.

He told them the Government would bring water to the village soon, and he would show the place where they would open up the ground for taking water out of it.

My cousin Dessie said how can you get water out of the ground—it is all rock and stones. Oh, said the man, we now have machines that make a small hole in the ground, and then you take your water out. We will put in a small machine called a pump. You can



move it with your hands and bring the water out. Yes, said one of the old men of the council, but what was wrong with the water we used to have and which our women used to bring.

So the strange man said the taste will be much better with the new water from the ground. And the man said your children will grow healthier and stronger. They will learn much better in the new school we are setting up. And your women will be much happier. They will no longer have to carry the water for miles and miles each day. They will be able to keep the house much better, they will look after the children and keep themselves in good health. So soon the women, too, can begin in school, who never could go to school before. They will learn better ways for themselves and then teach their families to live better.

The strange man said that naturally the Government had not all the money to give anything away for free, but they knew the village was



not rich. So they would ask the villagers to do their share of the work in building a platform around the place and a ditch away from it. He explained that if water was allowed to stand around, it would get full of dirt, and small children could fall into it and drown in it, and it would be a good place for mosquitoes to breed. Also they would teach a man from the village to keep up the machine they called a pump. The strange man showed us the place where they would make the well in the ground and went his way. Then we waited and waited.



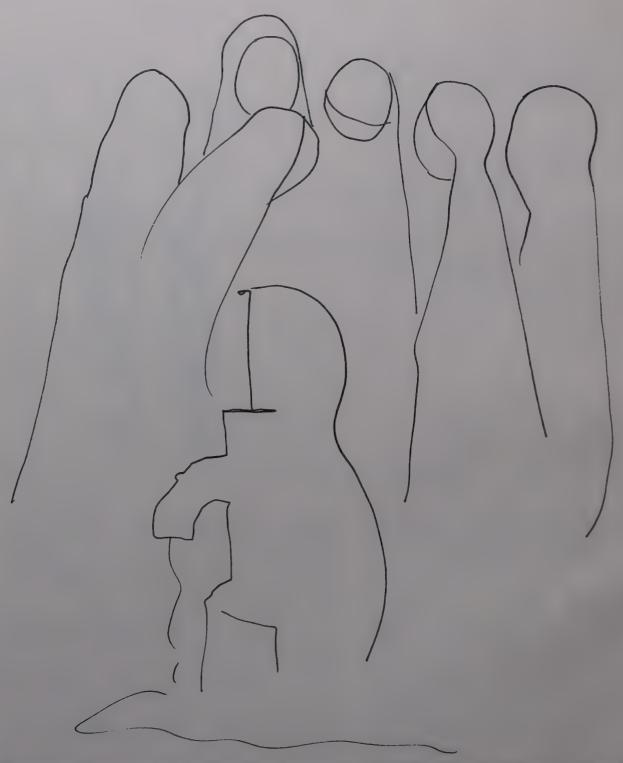
Six weeks later, early in the morning, there was a commotion near the gate where the sun sets. Two trucks with machines were there, and several of our men helped to unload and to clear a space for the Government people to work in. For two days we had a tremendous

noise but also tremendous entertainment, especially for the children. It was hard to keep them in school so finally the teacher took them out to show them the machines that ate their way into the ground. The teacher told the children what it was good for.

Almost all of us in the village were standing around and listened also. So we learned that all the illness in us and our children was not due to evil spirits, but to small things in the water, animals and the like, which we could not see with our eyes. Had we known before, we would have asked the Government people to come years ago. Also the teacher told us he would start teaching the children how to make a garden, now that we would have water to ease the plants over the dry season. This is where soon we learned about all these new vegetables and fruits.

The last day of working with the machines, there was a rumble and a gurgle from the hole in the ground, and all of a sudden the water was all over us. The children jumped and shouted and ran all through the shower. The older people all smiled and held out their hands and tasted the water.

The men with the machines left. Another few days and another truck came and unloaded bags of cement and pieces of pipe and a nice-looking machine of steel with a long handle. The two men in the truck first asked us to help



in building a platform and showed us how to do it. Then they told us to dig a ditch where the water could run off and not form a lake. Some days later they put together all the pipe, lowered it into the hole and put the pump machine on top. Then they asked us to move the long handle of the pump. I was the first one to venture to do so. A few strokes and there it was. A stream of glittering clear water. How fresh it was. We thanked the men helping us to this beautiful water.

This was the beginning of it all. How we did not have to make the tedious hour-long walks, lugging the water on our heads. How we got more time for our babies and our children. How our children grew up healthier and could go to school to learn many things that will make our lives better. How our food tasted different.

I often think back at all of this and what it brought to the village. Just for me, I often stop at the pump, waiting to take my turn at the handle. Early in the morning and late at night. Everybody is there. We chat. Sometimes it is just gossip or funny stories. Sometimes we talk serious matters about the village council or about the new school.

So, here I lie awake and look at little Bobo. He will learn more than we did. So will his children. Little Bobo, how I hope for you to be happy and live without fear or famine.

FURTHER INFORMATION ABOUT UNICEF AND ITS WORK MAY BE OBTAINED FROM:

UNICEF Headquarters, United Nations, New York

UNICEF Regional Office for Europe and North Africa Palais des Nations, CH 1211, Geneva 10, Switzerland

UNICEF Regional Office for East Africa P.O. Box 44145, Nairobi, Kenya

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UNICEF Ecology Cards: a Double Investment in Children

UNICEF greeting cards have long been a gracious way to send messages to friends and to help needy children at the same time. The proceeds from these attractive cards help to provide food, medicines and school supplies to youngsters in 115 developing countries. In the 1975 selection, a series of "ecology" cards have been added, as part of UNICEF's concern for our environment. Now there is the extra satisfaction in knowing that no trees have been cut down to produce these special cards, thus sparing one of nature's most threatened resources. This is another investment in a better future for coming generations.





UNICEF NEWS

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Communication for Development: From Propaganda to Dialogue AND Entertainment. Improving two-way communication, combining "entertainment" and "education" and avoiding western stereotypes in development work are stressed by John Balcomb, Chief, Communications and Information Service, for Eastern Africa. (Page 3)

Kid Stuff: Modules for SITE-TV in India. Villages in India can now have TV via satellite. *Gopal Dutia*, Assistant Project Support Communications Officer in UNICEF's New Delhi office describes plans for school broadcasts, adult programmes, and UNICEF-sponsored children's film modules. (Page 11)



The Communications Gap. Why do some development projects fail? Often because communications and development experts don't communicate too well with each other. Alastair Matheson, Deputy Director of UNICEF's Information Division, believes more use of traditional folk media can help close the gap. (Page 14)

The Waiting Room. For mothers waiting hours at a crowded maternal and child centre in Cairo, a sound tape combining entertainment and health and nutrition messages was produced by *Mohamed Islam*, Project Support Communications Officer in UNICEF's Beirut office. Other countries are copying the idea. (Page 22)



Educational TV: Catalyst for Social Change. A mass educational TV project to teach Pakistan's adults to read and write is described by *Ole Dich*, Chief, Editorial and Publications Services of UNICEF's Information Division. Today only 15 per cent of the country's 65 million people are literate. (Page 24)

Posters Can Help Family Planning. Many family programmes fail because of poor communication. Posters can be an especially useful tool because they are inexpensive and easy to produce and distribute. *Bjorn Berndtson*, UNICEF's Project Support Communications Officer, offers tips to improve them. (Page 27)



Communicating a Vision. The role of the "story-teller" emerges as vital in a major new approach to development. In an overview UNICEF staff writer, Anthony Hewett sketches the approach and looks at its implications for communicators. (Page 31).

Cover: Shadow play, a traditional form of folk entertainment is used widely in the south of Thailand, Malaysia and Indonesia. The scene on the cover comes from a story based on the Ramayana epic, and while the drama is shown, a narrator skillfully weaves in family planning messages. (Photo/DSCS Bangkok)

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COMMUNICATION FOR DEVELOPMENT: from propaganda to dialogue AND entertainment



All present-day governments recognize the power of communications. Most of them spend considerable sums on radio and television and go to considerable trouble to publicize political

John Balcomb is Chief, Communications and Information Service in UNICEF's Nairobi office for Eastern Africa. Part of this article has been drawn from one by Mr. Balcomb in Educational Broadcasting International.

and economic developments. A great deal of this official information work is devoted to image-building—persuading citizens in various walks of life that the government has their interests at heart and is doing a good job. This is fair enough, all things considered. No government can function effectively without the trust of its people.

But this is only a small part of the communications job that needs to be done to promote

Mzee Pembe and Kipanga, Kenya's top radio comics, are broadcasting a UNICEFsponsored family-health show which is one of the best recent examples of combining "entertainment" with "education". (ICEF 8025/Campbell)



On Sunday afternoons at four-thirty, when the cows come home in rural Kenya, crowds tune in to the hit radio show. Broadcasting in Swahili, Mzee plays a conservative old man with 20 children. Kipanga plays the parts of various friends who tease him about his old-fashioned ideas about health and child care. (ICEF 8026/Campbell)

development at large and to support the great number of individual projects which, taken together, add up to development. Anyone who has had first-hand experience in development work can cite many examples of ambitious projects which have failed because of poor all-around communications. Even trained communicators, when they are called in as consultant physicians so to speak, to ailing development projects, often overlook the importance of two-way communication.

It seemed important at the time to give a good deal of well-intentioned advice on how messages could be better slanted to various audiences, on how previously underexploited channels of communication could be better utilized and how campaigns—to get people to feed green vegetables to their children say—could be better orchestrated. All this was sound enough, I dare say. Centrally devised propaganda has a legitimate (though I would now say a limited)

place in development work, and it is foolish to undertake it in an amateurish way.

The arts of persuasion

When I went to India in 1967 as UNICEF's regional public information officer, it was presumed that I knew something about the arts of mass persuasion. I soon found myself called upon to advise on the communications aspects of development projects. Given my background as a writer of newspaper articles and a fabricator of publicity handouts, I naturally thought in terms of target audiences, delivery systems, multi-media campaigns and such. (The warlike nature of these terms, which are common to most communications handbooks, did not occur to me at the time, but is worth noting. The communicator is usually conceived as a kind of artilleryman who bombards his targets with messages with enough "feedback" built into the system to enable him to correct his fire.)

I found that UNICEF and other agencies had supplied a considerable amount of audio-visual equipment to various projects, and that much of this equipment was being poorly used. The hardware* was there, but the software* had very often been left to take care of itself. The small project support communications (PSC)* staff which our regional office began to assemble, drawing on a small part of India's immense pool of creative talent, initiated the production of some prototype materials. Several important ministries showed an interest in what we were doing. Soon UNICEF found itself supporting national efforts to overcome the "software" gap in a variety of ways.

We were eventually assailed by serious doubts, however. The campaigns we were assisting were basically advertising campaigns, and they didn't seem to be working as well as expected. Centrally produced slide sets, film strips, flip charts, etc. took a long time to percolate down to local level, and when they got there, they didn't seem to be very well adapted to local conditions. How could they be when there were so many different local conditions!

Avoiding western stereotypes

It has become increasingly clear that in thinking about communications and development, we need to clarify what we mean by "development". If we are not careful, western stereotypes prevail, bringing to the mind's eye factory chimneys, skyscrapers, ultra-modern hospitals and frozen lamb chops.

This type of development has its place, but let us try to substitute a picture of development more appropriate to the needs of the 80 to 90 per cent of the inhabitants of the Third World who eke out a marginal existence in rural areas. Let us think, for example, in terms of village workshops, improved traditional housing, one-room dispensaries, home and community gardens, pit latrines and protected springs.

This is the kind of development that offers the greatest hope of a better life for the masses of people in the developing world in the imme-

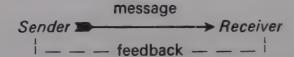
*Perhaps the terms "hardware", "software" and "Project Support Communication (PSC)" used so widely in the communications field are self-evident, but a simple explanation may be helpful to some readers. "Hardware" applies to the entire range of technical equipment used for communications purposes, "software" is the message or any kind of information being transmitted through the "hardware"; and "Project Support Communication (PSC)" is the overall term used for the entire activity devoted to building some form of communications elements to help implement development projects in every field: health, nutrition, education, etc.

diate future, and it is the kind of development that UNICEF promotes.

What kind of communication do we need to promote this sort of development? It is obviously the kind of communication that encourages people to think for themselves and to act on their own initiative, not just to do as they are told; to function as project participants, not merely project beneficiaries.

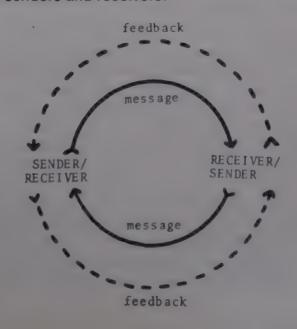
Getting away from manipulation

Existing theoretical models are not much help in this regard. As Wilbur Schramm observes in his recent book, *Men, Messages and Media,* the idea, prevalent in the early 1920's, that mass media could condition people to do precisely what those controlling the flow of messages wished them to do, has long since been exploded. Hard-sell, one-way communications campaigns arouse audience skepticism. They tend to be self-defeating in the long run. Eventually people make jokes about them. Yet most of the textbook models go like this:



This is the simplest version, of course; some models are complicated with little boxes labelled "encoder", "decoder", and the like—but the message line is always much heavier than the feedback loop.

This classic model implies that the purpose of communication is to manipulate the receiver. If we wish to get away from the idea of manipulation, we need a different model. What might be more appropriate is a circular diagram, in which the parties to the "communications contract" as it is sometimes called, function dually as senders and receivers:





A live broadcast at the Educational Television Station in Dakar, Senegal. In 1965, a TV pilot series was started on health and nutrition. The next year a TV series promoted functional literacy in the French language among factory and farm workers throughout Senegal. (Photo/UN)

This is the sort of thing that happens automatically in a conversation between two friends. A talks to B. If he keeps it up for too long, he begins to get negative feedback—B's eyes wander; he yawns. A may tell a joke or raise his voice to regain B's attention. But sooner or later he must shut up and let B have his conversational innings.

Two-way communication is simple enough in a context of this nature. Establishing two-way communication in the context of a large-scale development project is a much more difficult matter, particularly if mass media are to be used, for the media have a built-in, one-way bias which is difficult to counter. Nevertheless, it is absolutely essential to open up two-way channels in development work.

The two-way system

In attempting to bring this about, what are the practical implications to broadcasters and other communicators in the developing countries? This is a fair question. A communicator's approach is conditioned to a large extent by the media which are available to him and the very word "broadcasting" implies the diffusion of information from a central point to the periphery.

It would be a mistake, I believe, to assume that broadcasters and other mass communicators are inevitably locked into a one-way system. Portable audio and video-tape recorders have loosened things up considerably in recent

years. Field interviews, which once involved the transport of a lot of bulky equipment from place to place, can now be conducted with equipment that can be slung over the interviewer's shoulder. The man-in-the-street interview is an old radio device in the western countries. One can see how it could be used with considerable profit in the developing countries for agricultural extension broadcasts. To take one example out of the many that come to mind:

"Here is Mr. Singh, a farmer in Ludhiana District. Tell me, Mr. Singh, what difficulties, if any, have you encountered with high-yielding maize?"

This would be an instance of using radio to facilitate the flow of information from an "early acceptor" to a much larger number of other farmers than he could ever meet in person. It would also serve to feed certain vital pieces of information up the line to ministry officials and planners; perhaps Mr. Singh has encountered difficulties they have not foreseen.

Radio: a powerful development tool

Last year at a workshop UNICEF was sponsoring in Lusaka, Zambia, on "Communications for Social Development", the question of radio as a vehicle for development communication was taken up in some detail. Several professional broadcasters were included among the participants, so the discussion was not merely theoretical. Everybody agreed that at the present time radio is the only mass medium worthy



of the name in most developing countries. Newspapers have a small circulation and television reaches only the more affluent classes, but the cheap transistor receiver has put radio within the reach of almost everybody.

Just putting a message on the air, however, does not mean it is going to get across. The message delivered by radio is a fleeting one, and, as with all verbal communications, listeners "edit" what they hear; they tend to retain the messages they already agree with. Moreover, radio is a permissive medium requiring the listener's indulgence. All he has to do if a programme bores him, is switch to another station. Whether or not one believes in permissive education in other domains, radio education has to be permissive. You cannot make the listener "do lines" or stay after school for having missed the message.

To be effective, radio messages—about agriculture, health or anything—have to involve quite a bit of repetition, they have to be reinforced by on-the-spot extension work, and above all they have to be entertaining. Given these conditions, radio can be a very powerful development tool.

A success story in Tanzania

An excellent example of the use of radio for social development was the *Mtu ni Afya*, *Mama* ("Man is Health, Mama") campaign in Tanzania—a campaign which the Government regards as a phenomenal success.

Several things stand out about the campaign. It was carefully worked out ahead of time, the preliminary investigations having started 18 months in advance. It was adequately financed, with a \$200,000 grant from SIDA, the Swedish aid organization. (About half of this amount was for explanatory pamphlets.)

Listening groups were organized throughout the country, and 70,000 discussion group leaders were given advance training. The twelve half-hour radio programmes included music, dramatization, sound effects and interviews. Each programme was repeated three times in a given week so that different groups could listen at their convenience. The emphasis was on what people could do for themselves. Environmental health generally was discussed and such specific health problems as malaria, hookworm, dysentary, bilharzia, tuberculosis and water.

Sunday afternoon in Kenya

One of the best recent examples of combining "entertainment" with "education" can be found in Kenya.

Four-thirty p.m. is when the cows come home in rural Kenya, and four-thirty on Sunday afternoons is when people who are waiting for the cows to come home have, since February of this year, been tuning in to a new kind of comedy broadcast over Voice of Kenya's national service: the UNICEF-sponsored Mzee Pembe family-health show.

A humorous one-act play called "Distortion" by Kabwe Kasoma, Zambia's leading playwright, was commissioned by UNICEF for a communications workshop. The play satirizes what happens when communications break down between project managers and the villagers they are trying to help. Kasoma believes theater is a powerful development aid when used (ICEF 8027/Lanning)

Mzee Pembe and partner, Kipanga, are Kenya's top radio comics. Broadcasting in Swahili, Mzee Pembe can impersonate five tribal or community accents; Kipanga can do ten. They have been at it since 1946, and they are still going strong. In the present show, Mzee plays a conservative old man with twenty children. Kipanga plays the parts of various friends and visitors who tease him about his large family ("They're going to call you 'Bwana Population', you know") and about his old-fashioned ideas about health and child care.

On a recent broadcast, the "message" was that people should take their sick children to a government clinic rather than to a local mganga, or witchdoctor. In the dramatic rendering of this, one of Mzee Pembe's children is sick. He takes the child to the mganga who demands an outrageous fee in terms of cows, goats and chickens. While Mzee Pembe and the mganga haggle over the price—"Don't I get to eat some of the meat, too?" asks Pembe—the child keeps on crying. "Why should I pay you anything when the baby just cries more when he sees you?" Pembe finally asks in disgust, and, on the advice of his friends, takes the child to the clinic.

Entertainment ranks high

Swahili humour is satiric and at the same time good-natured. It is a fast-paced form of continual kidding. Mzee Pembe and Kipanga are masters of the genre, and their show has all the indications of being a hit. Anyone who thinks that the communications business can't be fun—meaning fun for the people on the receiving end of things—shouldn't be allowed near a microphone, a tape recorder or a camera.

Poverty, hunger and disease are hardly laughing matters, but this does not mean that development communications has to be approached with a puritanical grimness or that the poor have no right to enjoy themselves.

A recent survey of Bangkok's Klong Toey slum—a densely settled agglomeration of wooden shacks perched over stagnant water—revealed that 22 per cent of the households had television. Entertainment obviously ranks high in the list of the slum dwellers' "felt needs", as the sociologists would say. Experience, both in the developed and developing countries, increasingly demonstrates that entertainment is the best medium for delivering many messages.





This can apply to messages directed to decision makers as well as to the populace at large.

The use of theatre

At the Lusaka communications workshop referred to earlier, Kabwe Kasoma, Zambia's leading playwright, who is also Dean of Students at the University of Lusaka, was commissioned to write a play.

The Government of Zambia, with assistance from the World Bank and UNICEF, has launched a project in the squatter areas of Lusaka to help the residents up-grade their communities. It seemed to Kasoma that there was great danger of "project managers" and "project beneficiaries" finding themselves at loggerheads through a failure to communicate. He wrote a hilarious one-act play called *Distortion* to illustrate his contention.

In Distortion, the mayor, town clerk and city engineer visit a squatter settlement to announce the great new development programme they are going to bring the inhabitants. Owing to the fact that the mayor does not fully understand Bemba, the tribal language spoken in this particular settlement, he gives the people the impression the government is going to condemn their land to put a railway through. All hell breaks loose as a result: the people pull up the stakes the surveyors have planted and greet the city officials on their next visit with catcalls and volleys of rotten fruit. All is rectified in the end by an understanding community development worker who explains the importance of good project communications to the project managers.

Theatre on TV

The city officials are not merely satirised, they are lampooned in *Distortion*. Kasoma's wit is sharp and it is rough. When the play was performed at the formal opening of the workshop, the distinguished audience laughed, but some people felt it went much too far and might backfire. Actually, it did not. The play was later staged especially for the mayor and council—who laughed at it heartily and commended it.

It was broadcast on Zambian television, and it was one of the plays performed for Zambia's 10th anniversary independence celebrations. The message seems to have hit the mark, too. The Lusaka urban project now has a built-in communications unit to ensure that the sort of misunderstandings shown in *Distortion* don't arise.

Kasoma's informal, theatrical group, which staged *Distortion*, has since given birth to a Zambia Arts and Theatre Association, which includes university students and city officials among its membership, and which regularly stages original plays with political and development themes. ZATA has been given a weekly 45-minute slot for its "Play for Today" on Zambian Television, and public response has been enthusiastic.

Learning can be fun

The idea of using entertainment as a vehicle of instruction is certainly not new. Early Renaissance artists in Italy portrayed stories from the Bible in comic strip form on the walls of churches. At an even earlier era, artists in Asia dramatized the Buddhist and Hindu scriptures in a similar manner. But in today's developing countries it is difficult to find as many examples as one would hope of a happy wedding of entertainment and popular education. An unfortunate heritage from colonial days that has only recently been challenged may have something to do with this: the belief that learning is something that takes place only in school and is not meant to be pleasant.

Plenty of talent—not enough money

While broadcasters at the workshop concurred that "entertainment is the name of the game", most of them complained that money for what producers call "talent"—scriptwriters, performers, musicians, etc.—was the hardest kind of money to get out of their ministries.

Herbert Mokhachane, of Lesotho's Agricultural Information Office, was able to demonstrate that entertainment need not be expensive. Mokhachane played some tapes of a disc jockey show he runs for young farmers in Lesotho. All you need for a disc jockey show is a stack of pop records and somebody with the gift of the gab, which Mokhachane has. Between records he sticks in tips about farming the way ordinary disc jockeys insert commercials using a few sound effects like roosters crowing.

Even for a more elaborate type of radio show the costs are not high. The entire budget for the Mzee Pembe show in Kenya for 18 months comes to \$21,000, including artists' fees, studio rental and prime air time. This is considerably less than it costs to send an outside expert to Kenya for a year.

Talent is abundant in most developing countries, and it doesn't cost a great deal to mobilize it to deliver development messages. Perhaps a

certain amount of outdated puritanism makes officials reluctant to exploit popular performers for social purposes. Anyone who doubts that an entertaining radio show can work as a development tool should study the history of *The Archers* in England. *The Archers* is a dramatic serial about a rural family. New agricultural information is fed into the programme as a natural part of the plot. It is tremendously popular, and has proved much more effective in spreading new farming methods than the old-style radio talks the BBC used to run for farmers.

More talent for communication

International development agencies have in recent years given considerable assistance to

help countries strengthen their broadcasting and other communications services. Most of this aid has consisted of hardware and experts, the classic package. Little outside assistance has been available for talent. UNICEF is an exception to this rule. Just as it has long supported local training for nurses, nutrition workers and the like, so it is now beginning to support local talent in the very important field of popular communication for social development.

Rowland Hill, an eighteenth century English itinerant preacher, on being reproved for setting hymns to popular melodies, asked: "Why should the Devil have all the good tunes?"

It's a good question and is as pertinent today as it ever was.

The radio serial: a hit in Sri Lanka

The hero is the village doctor, the other characters are just ordinary people going about their daily lives, and once a week many people in Sri Lanka turn on their radios to hear what has been happening to them.

This popular weekly serial began in July 1974 as part of UNICEF's effort to help the Government promote the goals of World Population Year. With financial support provided by the UN Fund for Population Activities, Radio Sri Lanka introduced the programme of 15-minute weekly episodes broadcast in the island's two major languages, Sinhala and Tamil.

Aired during the peak listening hours, it is believed that the programme now reaches about 60 per cent of Sri Lanka's radio audience as well as many listeners in Southern India where Tamil is spoken.

Built around the day-by-day, run-of-the-mill problems to which listeners can easily relate, the weekly plots deal with the heartaches and frustrations, the joys and sorrows, the hopes and fears of village people or slum dwellers. The serial moves on from one personal crisis to another, following the usual pattern of radio dramas everywhere.

The village doctor was deliberately chosen as the main character because he is an important part of the everyday lives of the people and the perfect channel for introducing important messages about family planning, health and nutrition in a natural real life manner.

More episodes will undoubtedly be devoted to nutrition following the announcement of UNICEF's \$2.7 million special assistance programme for child nutrition services in Sri Lanka. Messages will be introduced to alert

people to the signs and dangers of malnutrition and to urge them to seek help at nutrition rehabilitation centres.

Occasionally some straight "spot announcements" will be included at the end of a programme to inform the people about the importance of growing more nutritious local foods to help alleviate the current food shortages on the island.

Once the serial is firmly established and the doctor's name becomes a household word, some thought is already being given to ways of making wider and more constructive use of his popularity.

One idea being considered is to use the doctor on a separate programme in which he could invite listeners to write letters asking his advice on family health problems. A panel of respected physicians, psychologists and sociologists could be organized to help frame responsible answers to the questions raised. This could prove to be a very useful interchange with the villager or with those who work directly with villagers.

A survey is being planned to determine not only the popularity of the programme, but the effectiveness of the messages. If the results show that people may be listening to the show and enjoying it but failing to understand the points being made by the doctor, then a decision will have to be made to either alter the content of the programme or cancel it entirely.

Jim Breetveld, Chief, Information Service, of UNICEF's South Central Asia Region, New Delhi.

KID STUFF-Modules for SITE-TV in India

Gopal Dutia



A space-age experiment will bring TV—via a communications satellite—for the first time to 2,400 villages in India. Morning broadcasts will reach rural schools. Evening programmes will vary with entertainment and practical information. (Illustration by Marion Farwell)

Some villages in rural India will soon be having their first encounter with television with the Satellite Instructional TV Experiment (SITE). At present, TV in India has been centred around the metropolitan centres of New Delhi and Bombay, apart from a few scattered "secondary" stations like Poona and Amritsar, also populous cities. The peripheral rural coverage of existing

up to the present time, almost no community sets have been installed.

The proposed coverage of 2,400 villages in six states in widely differing regions of India

stations is negligible, because sets are very

expensive, servicing facilities are meagre and

The proposed coverage of 2,400 villages in six states in widely differing regions of India through a communications satellite is the first step in the Government's stated objective of using the television medium to spread agricultural information and innovation, promote literacy and foster rural development in general.

Gopal Dutia is Assistant Project Support Officer in UNICEF's New Delhi Office.

The SITE broadcast project is scheduled to last for a year with four hours of daily broadcasting — one and a half hours in the morning for rural schools and two and a half hours in the evening for more general development programmes. The programme, recorded on videotape and prepared in AIR (AII India Radio) stations in Delhi, Calcutta and Hyderabad, will be sent to a ground station in Ahmedabad which is to feed the satellite.

An innovative and flexible approach

UNICEF has contributed to the SITE programming effort by sponsoring a series of teaching/learning modules for non-formal education involving children. These film modules—of varying lengths—are designed to give rural children a better understanding of the natural environment and to help them learn the alphabet, words and numbers.

The modules are produced so that they can be used in various combinations in widely differing formats and with studio-based lead-ins and inserts. The module format shows a way to release children's television programming from the exclusive hands of professional film-makers and TV producers, and provides the possibility for teachers, social workers, psychologists and others with some knowledge of film production to produce their own programmes using local artists.

The project shows how the Government could

assemble a series of low-cost module banks at major television stations, which would reduce the cost of producing individual TV programmes. The modules could be used again and again in different combinations and with occasional additions of new material. Carefully executed modules would have the life of good text-books so that their initial cost would be spread out over a long period of time.

Twenty modules, commissioned by UNICEF, show these advantages in a variety of formats. Some are straight live-action, using folk actors from rural travelling repertory companies. Others use different forms of simple animation: photo, object, and card-and-cut-outs to keep down costs. The scripts, songs, and music are all of folk origin and are recorded by folk artists from the Chattisgarh region of Madhya Pradesh State (one of the SITE cluster areas).

A few examples

The longest module, a 15-minute story about a bania (village tradesman and traditional money-lender) and an impoverished Brahmin, illustrates the pitfalls of avarice and not keeping one's word. On being promised a reward, a passing Brahmin helps a stranded bania from a tree. The bania then reneges on the reward, and the Brahmin, with an accomplice plays on the bania's guilty conscience to get several times more than the initial reward. This module is an adaptation of the traditional panwani form

Shyam Benegal, producer of film modules for the television experiment, is shooting on location in Chattisgarh. These teaching/ learning modules for non-formal education. to which UNICEF has contributed aid, help children learn the alphabet, words and numbers and gain a better understanding of their environment. (ICEF 8020/UNICEF— New Delhi)



(song narration with minimum dialogue) which is the way the folklore is performed in villages of this region.

A puppet module, Story of Man, uses a song about the various parts of the body and how they were put together by Lord Shiva to make man.

The Circle, a simple object animation using a ball of wool, illustrates how a circle is formed and shows how many familiar rural objects such as sugarcane chunks, grindstones, tomatoes and balloons have the same shape.

Cut-out animation modules attempt to relate the seven days of the week to their mythological origin and to help children recognize the words for them. To make each month more meaningful, a specific rural activity such as sowing, harvesting, or a special rural festival is related to that particular month.

The modules, After, Before, and Up and Down illustrate these concepts through two village buffoons who try to outwit each other. Natural phenomena, such as the formation of rain are illustrated in a cut-out animation module using a folk-song in place of narration. A module on animals, The Bear Cub, is based on a well-known children's poem by a celebrated North Indian poet. The funny, live-action skit, Cup and Saucer, is about object identification.

A good combination

An unexpected fall-out of the production of these modules has been the interaction between sophisticated film producers and folk artists of the region. The carefully-researched scripts were first tried out at a rural workshop in Durg (district headquarters—Madhya Pradesh State) where about 150 folk artists from 18 troupes of the region were assembled for a workshop. The scripts were substantially modified and some of the action improvised during filming. A useful exchange of ideas took place when some songs prepared by researchers and social anthropologists in Bombay found ready acceptance in the folk troupes, and were heard being sung and performed in remote villages some months after the shooting.

The actors, musicians and singers were found so engaging that the producer of the modules, Shyam Benegal, used them subsequently in a children's feature film, *Charandas Chor*, based on a local folk story sponsored by the Government-run Children's Film Society, for dissemination at children's morning film shows in cinema theatres all over the country.

Thus, the commissioning of Shyam Benegal to produce modules for the SITE project has resulted not only in clarifying the fact that the module bank can be a feasible concept for children's TV programming, but, in the process, has also brought into prominence a number of rural folk artists, singers, musicians and story-tellers who, in the future, will, undoubtedly provide much more material for children's films and television programmes in India.



Songs and music of folk origin are being recorded by folk artists for use in the film modules. Of the 20 modules commissioned by UNICEF, some are straight live-action, using folk actors; others use different forms of simple animation: photo, object, and card-and-cut-outs to keep down costs.

(ICEF 8021/UNICEF—New Delhi)

The Communication Gap

Alastair Matheson

Some 300 years ago a big project was started on the outskirts of Rome to drain the Pontine Marshes, try to eliminate the mosquitoes and the disease menace to the city, and at the same time to create more arable land which could yield food for the urban population.

The city dwellers welcomed the idea, for they had visions of a ready supply of fruit and vegetables nearby and, hopefully, those commodities would be abundant and cheap.

Not so the swamp dwellers, mainly fishermen, whose livelihood depended on the status quo and who became irate at the prospect of the swamps being drained and no water left where they could fish. Their reaction was predictable

Alastair Matheson, Deputy Director of UNICEF's Information Division, has travelled extensively throughout the developing world studying the communications aspects of development projects in many fields of activity including health, family planning, nutrition and education. While working for UNICEF in Eastern Africa, he established the Project Support Communication Unit, using various media in support of assistance programmes.



—they tore down the banks and walls that had been created to lead off the water, and soon the ambitious drainage project had been completely wrecked.

No one had thought of taking the trouble to explain to the swamp dwellers how they could adapt themselves to a new way of life as farmers instead of fishermen—a lamentable communi-



cations gap—not the first nor the last since man began to walk erect and added speech to his other senses of seeing, hearing and feeling.

Changing attitudes—a difficult task

Unfortunately, although the tools of technology are available today to help improve the lives of people throughout the developing world, too many projects are failing to achieve their goals

because communication experts and development planners often do not communicate effectively with each other or with the people they are trying to help.

I well recall a campaign in a certain coastal area of Africa where the tribe, well known for its predilection to enjoy life even to the extent of spending much of every night dancing and drinking, became the target of a communicaA typical Balinese song and dance drama weaves family planning messages into the entertainment. Using traditional media is especially effective in rural societies where sophisticated tools are relatively unknown. (Photo/United Nations)

tions campaign to increase productivity. A serious economic problem had arisen because the people were refusing to pick more cotton (the main cash crop in the area) than was needed to give them enough cash for the next two or three weeks. They left the bulk of the crop to rot on the ground.

A campaign was launched to tempt the people with such worldly goods as bicycles, radios and sewing machines in the hope that they would pick all the cotton and so make enough money to buy the items which were dangled before them as "bait". The cotton remained unpicked, however, and the majority of the people continued their traditional way of life, resting during the hot afternoons instead of picking cotton, conserving their energies for the evening's jollifications.

Whose values are better?

One of the most common mistakes made in developing countries since the Second World War has not so much been in ignoring the need for communication, but basing messages on wrong assumptions. Some communication experts have described this as "Western ethnocentrism"—the belief, often false, that a more modern, more western way of life is automatically better for people in Asia, Africa or Latin America, and the assumption that the people there will accept drastic changes, merely because they must be better.

All communicators are not agreed about this by any means, and there is a growing realization that often much harm can be done by trying to persuade close-knit societies to abandon entirely their old way of life, forget about their culture and traditions and accept strange new values.

Even when there is indisputable evidence that some of the new ideas, such as clean water or more nutritious food, will improve the people's lives, development projects do not achieve their goals when the people have not been sufficiently prepared for the changes or when wrong assumptions are made about the kinds of messages people are ready to understand or the best way to convey these messages.

"Our flies are smaller"

A story is told by Andreas Fuglesang, the well-known communications expert who has had considerable experience working in Africa. It is about an agricultural extension worker who was lecturing to a group of cattle farmers about

the dangers of the tsetse fly. For that purpose he had brought along a teaching aid which is commonly in use all over the world, namely, a model of the tsetse fly about half a yard or so in length. After the lecture a farmer came up to him and said: "It may be so true what you say about this disease in cattle, but it cannot concern us because the flies are not so big in our district". When Dr. Fuglesang tells this story to communications workers he adds some advice of his own: "Beware of your own reaction to the story. If you find it intriguing, there is hope. But if you find it just laughable, you had better get out of the communication business."

"A souse like us"

The perils faced by the communicator who relies on conventional approaches is related in an anecdote by Paulo Freire, the celebrated Brazilian educator. He writes of an investigator in Santiago who showed a group of tenement residents a picture of a drunken man staggering down the street and three well-dressed sober men conversing on the corner. His expectation was that this would provoke a discussion on alcoholism. The tenement residents reacted in quite an unexpected way:

"The only one there who is productive and useful to his country," they said, "is the souse who is returning home after working all day for low wages and who is worried about his family because he can't take care of their needs. He is the only worker. He is a decent worker and a souse like us."

The message, the medium, the audience

The most carefully conceived information campaigns can fail to convey their message because the planners have not given sufficient thought to the people's way of life and their lack of exposure to modern methods of communication.

A health worker told me of a mobile cinema van that came to a remote village to show a film about family planning. Most of the women had never been more than 20 or 30 miles from their villages and none had ever seen a film before. They were so awed and overwhelmed by the rapid succession of pictures being flashed on the screen, that the impact of the message was largely lost on them.

In another village, a nutrition worker used a simple flannelgraph to demonstrate the value of certain nutritious foods. The dominant reaction from her audience was one of wonder—how did



the pictures stick on the board?

Finding the right message for the right medium for a specific audience is a constant challenge to communication experts and development planners and workers. Much has been claimed for the power of the mass media during the 20th century, and it has certainly achieved wonders in bringing people instant information and in shaping life-styles and beliefs. But when it comes to rural societies, especially where literacy levels are low and traditions deep-rooted, the effectiveness of mass media in bringing about change is very limited, and experience has shown that probably the single most effective

means of communication is the inter-personal one—face-to-face between two or more people.

Mass media: the "class media"?

In India, it has been said that the mass media is actually the "class media" which serves only the urban dwellers and the "haves" in the countryside. There is little or no outreach to the rural poor. This can be said about the mass media to a varying degree in most developing countries, although radio is the one medium which cuts clean through the literacy barrier. (Since the advent of the transistor, it has even cut across the economic barrier so that today you can see

Housewives from two villages in Ghana learn new ideas about food and cooking from nutrition workers. In communities where literacy levels are low and traditions are deeprooted, the single most effective means of communication is the interpersonal one. (ICEF 3597/Almasy)

an Ethiopian peasant ploughing with a radio strapped to his wooden plough, or a Sudanese with a tiny transistor perched atop his camel.)

Yet despite radio's power to penetrate literacy and other barriers, it can seldom act as an effective agent for change when used alone. This is because it is too impersonal a medium, and unless there can be a "face" to reinforce the bodiless "voice" and give some substance to the message, little or no lasting effect can be hoped for.

The personal element

Experiments in India with radio have shown some interesting results. When All India Radio broadcast a series of programmes containing advice to farmers, special listening groups were assembled in one set of villages to discuss suggestions after each broadcast. Sometimes the groups rejected the advice out of hand, but at other times they readily accepted it.

In another set of villages, no listening groups were organized and villagers were left to listen to the broadcasts on their own, or ignore them altogether if they wished. No action at all resulted in this second situation. It took a combination of information through the media and reinforcement by personal discussion to get the people to act—when they wanted to.

The Director of MIT's International Communications Programme, Professor de Sola Pool summed it up neatly this way:

"The media may din propaganda into people incessantly, but if their friends and relatives preach different values, the mass media are not likely to win . . . in securing action, the mass media are even less effective in the absence of personal reinforcement. To get people to act in ways that conform to new values almost always requires that mass communications be reinforced by personal influence."

Many agricultural extension workers have reported that while farmers can learn about new techniques from listening to farm radio programmes, they are much more likely to adopt them if they see one of their neighbours getting a better yield by using the new method.

Using traditional media

In places where more sophisticated communications tools might be neither feasible nor practicable, much greater use should be made of traditional folk media. Take the puppets of Indonesia or Malawi or India for instance. They are a well-known medium of entertainment and



with a little skill, development messages can be worked into the repertoire here and there, taking care not to lose the main entertainment thread. This has been done to good effect in family planning motivation in Indonesia.

Repertory players, so commonplace in parts of Nigeria, can also be used to put over desired messages woven into simple plots. Well-known local singers who add messages to their vernacular songs often succeed in getting a point home.



Graphic materials are used skillfully by a doctor to teach young Pakistani mothers and housewives about pregnancy and labour. Even simple visual aids can produce unexpected results when women see them for the first time. A field worker using a flannelgraph reported a dominant reaction from one group: wonder. How did the pictures stick on the board? (ICEF 6794/Wolff)

Mwishehe Mbarak, the Tanzanian singer well-known through East Africa for his Kiswahili songs in "Congolese-style" rhythm, recorded a song in praise of nutritious foods for young children under the title "Mama Chakula Bora". It soon reached the top of the local charts for several weeks, and could be heard from the coffee shops of Zanzibar to the markets of Western Kenya.

With a little ingenuity, too, suitable slogans worked into dress materials of the "khanga"

type worn traditionally by many women in East Africa carry the message far and wide. Anyone familiar with Africa knows that once a topic has been "launched" to women at a well or a market-place, they are quite capable of "taking it from there", and the extent of the subsequent dissemination can be quite staggering.

Trial and error

The centuries-old folk media are tried and true and should be used to their greatest advan-



The warm and friendly manner of this health worker goes a long way to help communicate new concepts about family planning when she meets with women's groups throughout Singapore.

(UNICEF/UNDP 8030: photo by Prathana)

tage. New communications tools are now being tried and tested every day and new lessons being learned—especially from the mistakes that have been made.

It was, in fact, some years before UNICEF itself realised just how out of place and irrelevant white plastic dolls were in Africa when used to demonstrate to village mothers the correct way to bathe their babies during the childcare class.

And today many irrelevant training films are being shown in developing countries because there are no suitable ones about local conditions and situations. The result in many cases is that those who watch them consider them devoid of meaning and any inherent message tends to be lost or under-utilized, even where films have been "dubbed" into the local language or vernacular.

The story, probably apocryphal, is often told of the training course for sanitation workers held in the capital of a certain land-locked Middle Eastern country consisting mainly of desert. The request went out for an instructional film to be shown to the students, and when the film was shown, it proved to be all about how New York City disposed of its garbage!

Only recently have studies begun in earnest into how different people perceive films and pictures. In many cases, the studies are incomplete but surveys carried out, for instance, into a series of photographs clipped from "Life"



Experience is the best teacher. It took UNICEF some years to realize how out of place and irrelevant white plastic dolls were in Africa when teaching village mothers the correct way to bathe their babies during child-care classes.

(ICEF 4773/Bernheim)

magazine a few years ago and shown to secondary schoolboys in Tanzania, yielded some surprising conclusions. One picture of a jazz group performing before an excited audience was interpreted as being a battle between two rival groups of people.

Another study of perception in Africa took the form of a series of simple line-drawings shown to different categories of people. One of the drawings was of a typical African hoe—the jembe. Many of those shown the drawing interpreted it as a man walking along a road.

Preventing communication failures

These examples are sufficient to show that the possibilities of misinterpretation are considerable and serve to underlie the warning that even well-planned campaigns can end in failures if there is no proper monitoring or "feedback" to make sure that the wrong effect is not being created by the communicator—however innocently.

But communicators do not work in a vacuum. Even their best efforts and their most effective tools cannot turn a poorly planned development project into a good one. Moreover, communications elements must be built into a project in the initial planning stages. Experience has shown that when they are "tagged" on as an afterthought, a serious communications gap may well arise which could hinder the eventual success of the project.

the waiting room

Mohamed Islam

"It's sometimes fun sitting around here. You know, a rest from housework. It's also cooler than at home."

"I just gossip with my friends."

These were but a few of the remarks made by women sitting in the maternal and child health centre in Cairo's Boulak area one warm April day last year.

The waiting room with long low benches was full to capacity. Some 35 women with their children. The "sound-mix" was an interesting conglomerate of chatter, wails, screams, gurgles, coughs and, above all, merry laughter.

A group of us were on an assignment to shoot a film, and one of our locations was this particular centre in Boulak.

Dr. Nabil, in charge of the centre, was busy as usual. With traditional Egyptian courtesy, however, he allowed us in with our equipment. We filmed him talking to a mother and giving her advice about her three-month old baby. His office was bedecked with the usual run of the mill posters—baby foods, weight charts, smiling babies.

"How long do these mothers have to wait to see you, doctor?" I asked.

"Well, as you see," he replied, "I am the only

Mohamed Islam is the Project Support Communications Officer in UNICEF's Beirut Office for the Eastern Mediterranean Region.



one here, so sometimes it could be as long as a couple of hours."

"Have you ever thought of trying to put this waiting time to some profitable use for mothers?

"Not really, frankly, I'm too busy just trying to serve as many mothers and children as I possibly can."

An idea is born

This is where the idea originated. How could these long waiting hours be used more constructively? Perhaps the Egyptians' love for





singing could be put to good use. Song is almost a way of life throughout the country and popular singers enjoy great prestige.

We had already had some experience in using song as a medium to convey some of our messages on personal hygiene. One song, in particular, was about swatting flies. The song became very popular in two day-care centres in Boulak. In fact, in one centre where it had been arranged for a little dance, one can see three year olds swaying and swatting to the tune.

If songs were what the people liked, that is

what we decided to give them. We produced a half hour tape of popular songs interspersed with "message spots" about child feeding and blared away with our messages in the waiting room.

The language was colloquial and the tone friendly and informal. The script was prepared by a nutritionist and covered child feeding from birth to one year. The announcer always addressed the message to the mother. Suggested recipes were kept realistic and well within the reach of the average mother.

We also included a longer "spot" on Supramine, a UNICEF-supported diet supplement for children. The spot ended with a little girl singing a jingle about Supramine.

The tape was then tested on a group of 21 mothers; songs were immediately recognized, smiles appeared and humming was heard.

Then the message came on. Interest was immediately aroused. This was something new. "What a pleasant voice this announcer has," we heard the women mumble.

Sound tape prompts discussion

The general impression we all had, including that of a social worker who was asked to be present at this test run, was that the mothers reacted favourably towards the tape, and that it prompted considerable discussion. For example, one point that captured their attention was the actual value of eggs. Several mothers admitted that they had been under the impression that eggs were harmful to the child before the age of one.

Indeed, the social worker felt that the greatest value of the tape is in the discussion it evokes after it is run. She noted however that, "unless there is an interested and well-informed member of the staff ready to lead the discussion, the full value of the information presented would be considerably limited".

Well, this is how a simple, easy-to-do idea was implemented. The idea also caught on in Jordan and Saudi Arabia where samples of the tape had been sent. In Jordan, it is being used without any changes; in Saudi Arabia, the dialect is being changed to make it easier for mothers to understand.

The possibilities are endless for sound tapes to be used to convey any kind of message to waiting audiences anywhere. Certainly they are helping to entertain and instruct mothers during their idle waiting hours at Boulak's maternal and child health centre.

EDUCATIONAL TV: Catalyst for social change

Ole Dich



It's never too early to start using educational TV as a teaching tool, especially when its impact is reinforced by a capable teacher who has a good relationship with his young pupils, as in this classroom in Nigeria.

(ICEF 6443/Schiano)

"A literate mother will never allow her child to become a school drop-out." This statement by Azlam Azhar, young and dynamic Director-General of Pakistan Television, reflects the basic philosophy underlying his country's new attempt to solve its monumental illiteracy problem.

Only about 15 per cent of Pakistan's 65 mil-

During a recent field trip, Ole Dich, Chief, Editorial and Publications Services of UNICEF's Public Information Division, visited Pakistan and learned about a mass television education programme being developed to help bring functional literacy to thousands of illiterates in Pakistan.

lion people can read or write—to a degree. This sad fact raises many questions in Azhar's mind: "Can we afford to spend money on television if we only reach the middle and upper classes? We don't think so. We believe that the lower classes have the highest priority. They need education—and if we can bring this powerful medium out to them, we can make television what it should be: a catalyst for social change."

International Literacy Day, which falls on 8 September 1975, will be an important milestone in Pakistan, for on that day a mass television education programme will be inaugurated.

Supported by Prime Minister Bhutto, this pro-

gramme is the result of the efforts of two men, Azlam Azhar and Vincent David, who agreed, after an accidental meeting some time ago, that teaching and television, if effectively combined, could help thousands of Pakistan's illiterates learn to read and write.

Trial and error

In 1960 Vincent David took leave of absence from his well-paid job as an architect's supervisor to work as a volunteer in an adult literacy programme being carried out by the Adult Basic Education Society. Teaching in villages to which he often had to ride 30 or 40 miles on a bicycle, he persisted in his efforts despite many hardships, because he believed that in order to reduce the 60 per cent drop-out in Pakistan's primary schools, the first step was to teach the adults. Only when they understood the value of literacy would the children be kept in school.

Over the past 14 years he has improved the simple way of teaching people to read and write. This was no easy task, for to keep the attention of adults, they must see relatively quick results. After years of trial and error there are two clear signs of evidence that the method is successful: the drop-out rate in the adult courses is negligible, and the capacity to retain the acquired knowledge of reading and writing appears to be extremely good.

The system is so easy that this writer—in just five minutes—was able to read and write half a dozen sounds in Urdu, and still remember them after some time. It is a system of presentation, repetition, query and use. Then recognition and application—again and again—under different circumstances. And it works.

Teacher and pupil: a close relationship

The plans being developed to introduce the teaching method on television involve two basic elements: training a corps of teachers and organizing a network of Community Viewing Centres.

The training of teachers in the Adult Functional Literacy programme is already underway. These teachers will work in the viewing centres in the villages—picking up where the televised lessons leave off. They will be the personal link to the students, and their task will not be limited to teaching. They will also function as social workers to the extent that they will try to learn the reasons for any potential drop-out and to do what they can to prevent this from happening or to try to bring back

those few who do leave the programme from time to time.

The pilot project covers the Punjab area with Lahore as centre for the actual teaching. Half-hour television programmes with Vincent David as the teacher will be sent out twice daily. In 200 Community Viewing Centres, groups of men or women will watch and listen, and after the programme has ended will continue to work under the guidance of a teacher.

Over the six-month period of the pilot programme, it is expected that some 12,000 men and 12,000 women will attend the classes. And in the course of this period, they will achieve literacy equal to third grade in school.



Evaluation—and expansion

When the first six-month course is finished, the students will be left alone for a period of three to six months. After that time, a survey will be made to ascertain how much of their newly-found knowledge has been retained.

This follow-up is essential, according to Vincent David, whose experience as Director of the Adult Basic Education Society of Gujranwala has convinced him that retention can be assured only if there is at least one to three follow-up programmes involving the reading of some simple booklets on the part of the student.

This is part of the ambitious plan for Pakis-

A simple and effective method of teaching Urdu has been developed by Vincent David, Director of the Adult Basic Education Society of Guyraniwala in Pakistan. A pilot project is underway to introduce this method on TV. (ICEF 8033/Dich)



The six-month TV project will give the equivalent of third grade literacy to some 12,000 men and 12,000 women —a great step forward in a country where only about 15 per cent of the people are literate, (ICEF 8032/Dich)

tan. Also—if money is available—it is hoped that about 50,000 Community Viewing Centres will be organized before 1980, with each centre being able to give 240 people—men and women—the ability to read and write.

A message with meaning

In teaching functional literacy, educators in Pakistan have learned that people are not interested in the alphabet alone, or even just words for their own sake. The message must have real meaning and importance to the receiver. That is why a sentence such as a cat ran after the rat would never be taught but rather one that might read a fly is dirty—therefore we must get rid of it.

The Adult Basic Education Society has already published a long series of booklets with such titles as: You and Your Child, What Should We Eat, A Good Farmer, and Poultry Farming.

This programme will undoubtedly help to improve the role of women in Pakistan in the view of Vincent David who also points out that

"if you teach one man you are only teaching one person. But if you teach a woman, you teach a family".

The cost

During the period of the pilot project it is estimated that it will cost up to about 100 Rupees (US \$10) to teach an adult to read and write. Later this cost should be reduced as more Community Viewing Centres are opened.

A centre in a village will cost about 4,000 Rupees (US \$400). The students will pay for the courses—and for the booklets. The fees will be modest, but David considers it important that they participate economically in their future.

The pilot project is receiving some UNICEF assistance together with help from the Pakistan Government, and private groups have expressed great interest in this unique project.

"After ten years of television, we feel that we are beginning to earn our salaries" says Azlam Azhar. "We should contribute to the future of our people—or we are worthless."

POSTERS CAN HELP FAMILY PLANNING

Bjorn Berndtson

Why are so many family planning programmes making such little progress? Certainly it has not been for lack of worldwide attention. The problems of a too rapid population growth and the need for family planning have been emphasized over and over again through every possible medium of communication and received added impetus during the recent World Population Year.

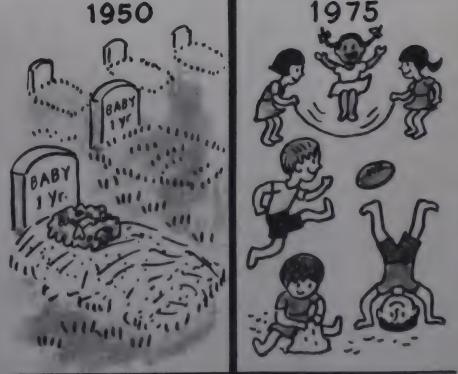
Yet the sad fact remains that the results of most family planning programmes are disappointing, and few of them are achieving their goals.

One attempt to search for some answers to this question was made by the Community and Family Study Center of the University of Chi-

Bjorn Berndtson, currently Project Support Communications Officer in UNICEF's Information Division, was associated with the Community and Family Center of the University of Chicago for many years. This article draws largely upon the monograph, Relevant Posters for Family Planning, which Mr. Berndtson coauthored with Donald J. Bogue and George McVicker.

Parents who see too many of their babies die from disease or malnutrition go on having more and more children to ensure that some of them will survive. But today improved health and nutrition services in many developing countries are helping to keep more children alive and healthy than in the past. This concept can be effectively portrayed in posters displayed among peoples who, as yet, are not sufficiently aware of the possibilities of a better life for their children.

BABIES DON'T DIE AS OFTEN NOW 1950 1975



You don't need to have as many!

PRACTICE FAMILY PLANNING

cago. Based on the premise that the root of the problem is the failure of most family planning programmes to communicate their message effectively to the audience they are trying to reach, the Center conducted extensive research in many developing countries on the communications aspects of family planning programmes.

The results of this research have been published in a series of four monographs which examine the major obstacles countries face in conveying their messages. The study suggests ways to improve the use of direct mail, radio, television and posters.

The overall conclusion of the studies is that communications aspects in most family planning programmes are "in need of immediate and drastic overhaul", and the Center hopes that

The need for better spacing of children can be dramatized very effectively in posters by using various approaches. This poster attempts to "desexualize" the subject of family planning. Experience has shown that separating sex from family planning tends to encourage many people to talk about the subject more freely.

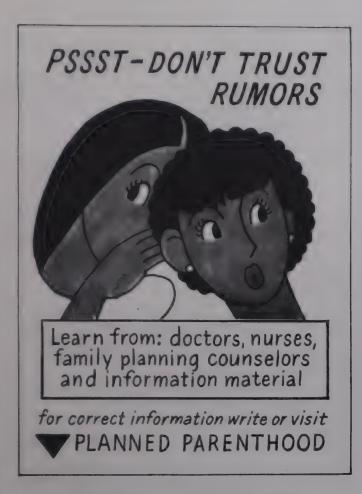
some of the ideas and prototype materials presented in the studies will help to "stimulate the process of overhaul... and lead to fresh and improved work in the individual countries of the world".

The importance of posters

The poster, while only one of many available communication tools, can be of special value to developing countries because it is so inexpensive and easy to produce and distribute. Much use has already been made of posters and signs for publicizing family planning programmes. The threat of famine and other disasters due to overpopulation and the plight of families who bear too many children are themes which easily lend themselves to dramatic presentation in posters. Such posters, placed in spots where large numbers of citizens can see them, are able to convey their message silently, yet persistently and effectively.

Within the past few years, however, with a few exceptions, there has been little progress in both the quality and quantity of posters ad-





When new ideas clash with centuries-old customs and beliefs, exaggerated and distorted gossip or hearsay begin to flow widely through the population. False rumours are especially quick to spread about the effects of contraception on health, on the morals of the young and about the basic motives which underlie the work of family planning itself. Posters can alert people to this danger and direct them to the people who can help them understand the true from the false.

vertising family planning. Many merely repeat vague messages already known and consequently cease to be challenging. Since many family planning programmes in the world are not attracting sufficient numbers of new "adopters" which they have set as "targets", how can posters be improved to help family planning programmes motivate more people to action?

Three important principles

In seeking to raise the level of posters and make them more effective tools of communication, the study, Relevant Posters for Family Planning, stresses three major points:

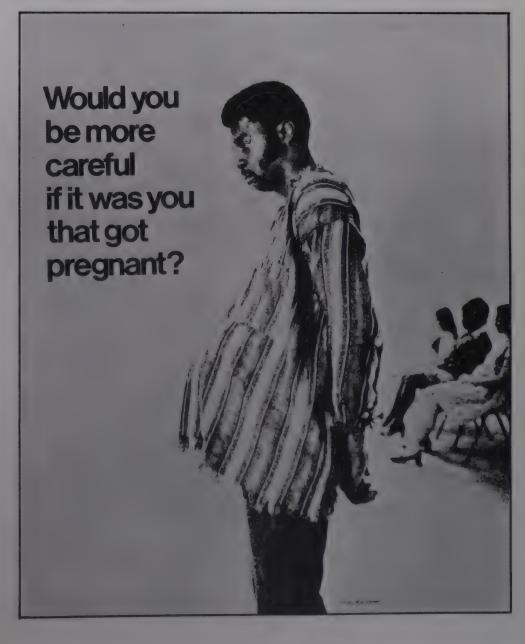
Posters must have a purpose. Instead of being just broad "shotgun" reminders to practice family planning, the new generation of posters should deal with highly specific problems and obstacles. Rather than a few posters with a general message used for prolonged

periods of time, there should be a much wider variety of posters, each dealing with a specific topic. In other words, they should be pointedly relevant to current issues in family planning and cause the viewer who is not a family planner to re-examine his thoughts on the subject.

Posters must have good design. Many posters violate the basic principles that govern effective communication via public display. Discussion and review of these principles and their application to the production of family planning posters should be encouraged.

Posters must be pretested. Too many posters are produced because they are found pleasing to family planning administrators and communicators (who usually do not know a great deal about communication theory), not because they

Men should also do some thinking about family planning. This poster, with its humorous barb, attempts to promote such thinking.



have been found pleasing or convincing to the audience for which they are intended. Before a poster is produced in quantity, it must be evaluated critically by a professional communications audience and then "pretested" carefully to learn how its intended audience will react to it. Much poster communication has been wasted effort; the audience has simply been unimpressed by the efforts of the poster-makers.

A few examples

Twenty-five situations or conditions impeding family planning are presented in the Center's poster study as well as 100 poster designs aimed specifically at these obstacles. The intention is not for the designs to be copied, but rather to stimulate a complete re-thinking of the poster-making activity in order to make it more relevant and more powerful in removing the obstacles to progress. A few examples are given below.

Room for improvement

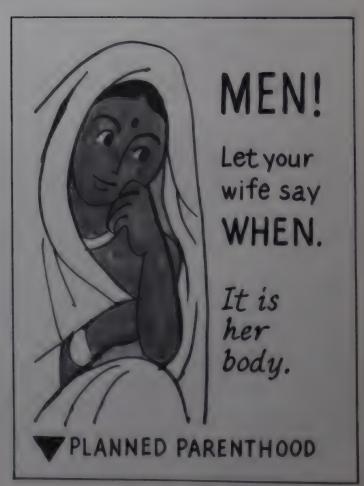
Since 1798 when the first mass-produced posters were made possible by the invention of the process of lithography, posters have been

used to convey every conceivable kind of message. Some succeed, some fail. In his book, The Art of the Poster, E. McKnight Kauffer compares a good poster with a well-selected fly cast by a skillful angler who knows his particular fish."

Today, throughout the developing world, some family planning posters are succeeding in catching their "particular fish", but there are many more that are not. In view of the simplicity, the speed, the low cost, and the relatively small effort required to produce posters, it is hoped that more people involved in their production will examine the possibilities of making them more effective rather than continuing to waste large amounts of time, effort and money in turning out posters that do nothing more than convert the already-converted, have a boomerang effect, or (most often) go unnoticed.

Sex shyness and the subordinate status of women are common in many countries. Posters can aim to encourage couples to talk with each other more frankly about family planning matters and to call attention to the need for women to take a more important role in making decisions about the number of children the family should have.





^{1.} For information about the availability of the four studies referred to in this article, write to the Community and Family Study Center, 1411 East 60th Street, Chicago, Illinois 60637. The titles of the studies are: Mass Mailings for Family Planning, Twenty-five Communication Obstacles to the Success of Family Planning Programs, Radio and Television Spot Announcements for Family Planning and Relevant Posters for Family Planning.

Communicating a Vision

By Anthony Hewett

In the last three weeks of May, a major development story sprang into sharp focus at UNICEF's Executive Board session in New York: the last pieces of a coherent, overall strategy to forge a "missing link" in the development process finally dropped into place.

For professional communicators, one of the story's key elements was clear recognition that the strategy's success will

depend crucially on the story-tellers themselves.

The Board's word for this is "advocacy": the job of everyone involved-journalists or not-at all levels of the development process to bring about the changes of attitude needed to make the strategy work.

The strategy's target is what UNICEF Executive Director Henry R. Labouisse calls the "missing link", the assembling of a basic package of services aimed specifically at children and the force for development growth they represent.

Attack at the grassroots

The new approach is based on the growing recognition that traditional development theories, which assumed human and social needs among the poorer segments of the population-including children-would be met from benefits of increased economic productivity "trickling down", have not had this effect.

Now it has been seen that these basic needs—adequate food, clean water, simple health care and a degree of education - are a prerequisite and a complement to the development process, rather than its by-product. As such they must be spread to the broadest possible population.

The strategy's answer: simplified services, meeting the bulk of real needs and problems, spread across the society as a whole. And to do it by capitalizing on the human resources

already existing at this grassroots level.

Not only does this make services cheaper to run; the involvement and identification with the community is a maior source of the strategy's strength.

The big challenge: communication

Such a profound change of approach cannot succeed without overturning many traditional development doctrines. These are as often enshrined in international assistance procedures as, within developing countries themselves, in the existing attitudes of government administrations and profes-

It is a communications challenge of immense proportions, demanding every effort from people in all aspects of

the development process.

By its nature, however, particular responsibility falls on the professional communicators-and their role as an integral part of the development process is implicit or explicit in all the strategy's component parts.

An "affordable" vision

Immense though it is, the communications task is not impossible. The strategy's clear vision provides its own

compelling logic.

And it is an "affordable" vision. Because it draws on skills and capabilities already existing in the communities, the new approach needs only moderate levels of initial investment by external funding and modest recurring costs within the means of the developing country.

To suggest a perspective, Mr. Labouisse pointed out that total external funding from all sources for basic children's services could be met with 10 per cent or less of the \$30 billion the World Bank estimates will be needed for all development assistance by 1980.

The pieces begin to fit

In the past few years, decades of experience in all these basic services for children—ranging from health care, nutrition education and small-scale food production to schooling, clean water supply and services for women-have been reappraised by the experts and organizations most involved, including UNICEF.

The result has been a series of reports to UNICEF's Board, each adding to a final picture of the new approach. The work was capped at the 1975 Board by reports on two major areas of the problem: basic health care and child nutrition.

The lessons drawn from this work meshed closely with those from earlier and complementary work on basic education, formal and non-formal.

Health care: simple is better than none

These lessons emerged most clearly in the landmark WHO/UNICEF study on basic health care alternatives.

The study suggested that scarce resources could be more effectively used for brief courses in specific health problems for primary health workers from village communities themselves, rather than on extended and expensive training of doctors and nurses.

Village pharmacies with a small range of the most commonly-used drugs would supplement this work which, while able to detect and refer more complicated cases to higher levels of the health care system, would be able to handle 80-90 per cent of health problems in these rural communities.

(The report on non-formal education to the 1974 Board proposed analogous measures aimed at spreading basic literacy and numeracy, allied with practical skills attuned to the needs of the rural communities.)

Also ... adequate food, clean water

Many of the same conclusions were drawn in the study on child nutrition priorities: a community approach, with heavy reliance on village workers, co-ordinated with the primary health workers. And a special need for advocacy, to focus greater attention on what could be done - through policies, planning and programmes to improve the frail nutritional status of hundreds of millions of the developing world's children.

Now, with the growing body of knowledge in safe-water supply, family planning and services for women, and the development of the new approaches in basic health, education and nutrition, the way is clear for Mr. Labouisse's "missing link" at last to be forged.

Words into action

The challenge to professional communicators posed by the new strategy was reinforced by an examination at the Board of UNICEF's own information policy. Recommended: increased emphasis on these key information areas:

- -strengthening efforts to educate the public;
- -advocacy, aimed at decision-makers;
- -fund-raising, with traditional and potential new sources of revenue; and
- -Project Support Communication, to improve project effec-

As Mr. Labouisse pointed out: "It is time, now, to translate words into action.'

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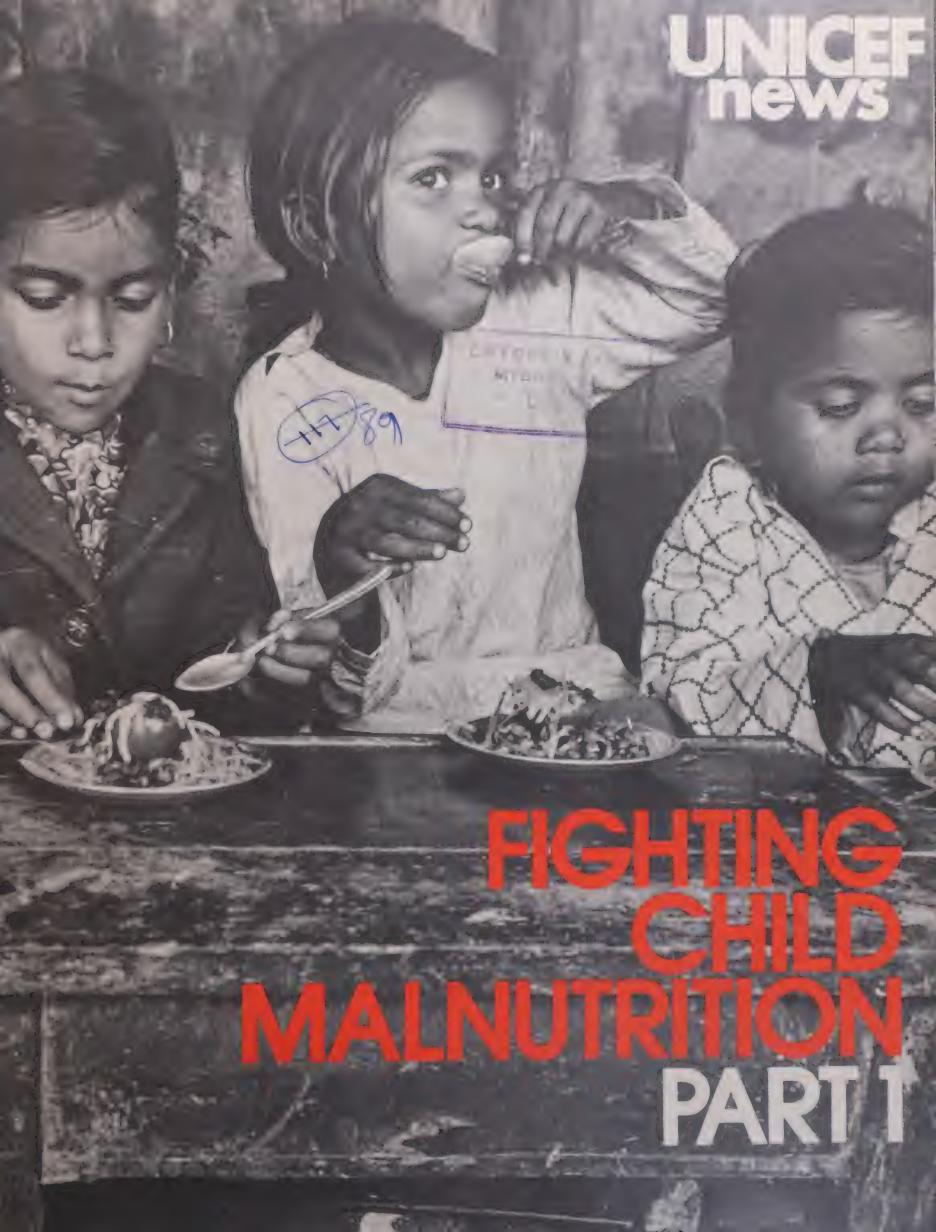
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Issue 85/1975/3
Editor: Miriam Miller
Design: Bernard P. Wolff

The subject of child malnutrition is of such importance that UNICEF NEWS will deal with it in two editions. Issue 86 will be Part II.



Death at an Early Age. Pointing out the alarming increase in malnutrition and its relationship to poverty and rapid population growth, Lester R. Brown, President of Worldwatch Institute, calls for a global strategy to reverse the trend of growing deterioration in child nutrition. (Page 3)

Photo Report from India: Making Better Nutrition a Way of Life. Educating mothers to new diet ideas and increasing the supply of locally available nutritious food resources are among the long-term approaches being tried to help India solve its chronic problem of malnutrition. (Page 10)





Stopping Famines Before They Start. According to *Dr. Jean Mayer*, Professor of Nutrition at Harvard University, a solid body of information already exists which could be developed into a system to prevent emergencies from becoming disasters. The details of this system are outlined. (Page 18)

The Grim Facts of Life on Haiti. Efforts to raise Haiti's low nutrition standards, as reported by *Alastair Matheson*, UNICEF's Deputy Director of Information, include co-ordinating nutrition projects with health, water and sanitation projects and increasing local food supply. (Page 21)





The Month When the Children Wait for Food. New, practical ways of helping to improve food storage are described by *Jim McDowell*, Chief, Food Technology and Nutrition Section in UNICEF's Nairobi Office. Because they are suited to traditional mores, people readily accept them. (Page 27)

Other Features:

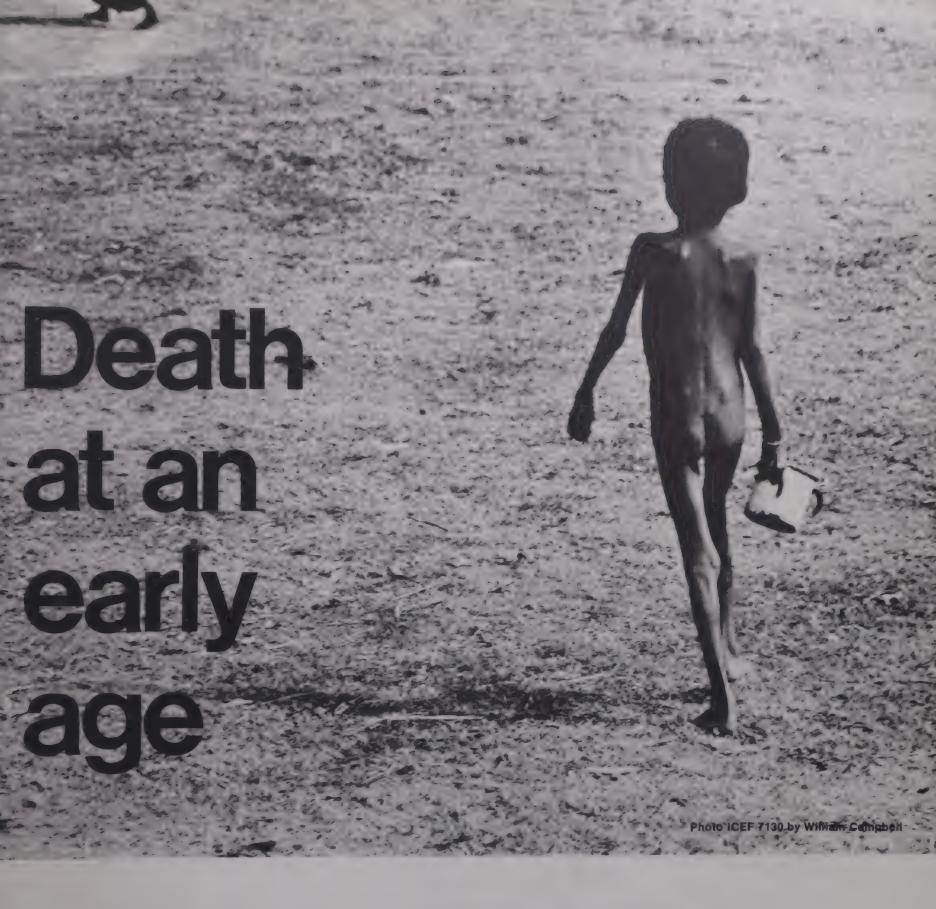
A one-page report on "Oralyte", a simple, inexpensive treatment that is saving the lives of infants and young children suffering from dehydration caused by intense diarrhoea (page 15). A world map illustrating who is getting enough, less than enough and more than enough calories throughout the world (center spread).

Cover: Children at a centre in the State of Bihar, India, eating a nutritious meal prepared by mothers who had previously attended some demonstration classes given by nutrition workers. (ICEF 7122/Bernard Pierre Wolff)

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Lester R. Brown

The housewife in San Diego, California is a careful shopper. She scrutinizes each package of processed food she buys, often reading the nutritional labels to insure her children have a properly balanced diet.

A leading authority in the field of nutrition, Lester Brown is currently President of the Worldwatch Institute, Washington, D.C. Author of many books and articles, Mr. Brown was a Senior Fellow with the Overseas Development Council for many years.

The health food fadist in Hamburg, Germany is equally concerned that the wheat germ and powdered seaweed he buys at the local food store will provide his young son with the proper balance of vitamins and amino acids. To both these parents, nutrition is a sophisticated concern.

Such intricacies of planned meals are of scant importance to parents in the Ganges delta villages of Bangladesh. When the summer rains come to this part of the world, flooding rice fields and roads, children often eat only once a day. Each year this season generates a rash of funerals of infants and young children.

An estimated 1,000 million people suffered from hunger and malnutrition at least part of last year. Millions died either from hunger or hunger related illnesses. No accurate figures exist concerning the number of deaths attributable to malnutrition, but the World Bank estimates that over half of all child deaths in Latin America result directly or indirectly from poor nutrition.

In the two decades between 1950 and 1970 there were encouraging improvements in the diet of the poorer two-thirds of the world's population. Thanks to the Green Revolution and a better understanding of nutritional needs, average per person consumption increased in many developing countries. Recent events in the mid-seventies have foreshadowed an alarming reversal in these global nutritional trends. The unwillingness of countries with rapidly growing populations to fully commit themselves to family planning, coupled with a slowing of increases in food production, is undermining diets in the Sahelian zone of Africa, East Africa and on the Asian subcontinent.

A recent United Nations study in India indicates that two of every five persons is undernourished. Fifteen million people—all children under five or pregnant and nursing mothers—receive less than half the calories they need.



Poverty and mainutrition are closely related. In many poor countries of Africa, Asia and Latin America, children under six account for half of all the deaths. Inadequate diets make children more vulnerable to many diseases, especially in overcrowded slums where poor living conditions prevail and mothers know little about the needs of good nutrition for young children. (UN Photo 120, 635/B. P. Wolff)

Recent increases in the death rates in several Indian states indicate this growing nutritional stress is beginning to take its toll.

Tragically, rather than dying rapidly, demanding attention by their very plight, more and more persons are sentenced by nutrition to an empty, wasted life, with slow death at an early age.

Redefining famine

The great famines of history, in Ireland in 1846, in Bengal in 1943, were geographically focused; they devastated the populations of entire countries. Now with well developed national and international food distribution systems, the impact of localized food shortages can be contained.

Increasingly, the burden of hunger and inadequate diet is concentrated on the poor. For the sizable segment of mankind that already spends 80 per cent of its income on food, the doubling of the price of wheat and rice over the last two years has been the final blow to meagre diets. Unable to increase personal expenditures for food, their subsistence diets are being pushed below the survival level.

Few of man's needs have resisted fulfilment so strenuously as has the need for food. In countries containing one-third or more of the world's people, average food intake is today below the minimum required for normal growth and activity. Most children in the poor countries suffer from protein malnutrition at one time or another. Even children who received adequate protein while being breast-fed often experience protein deficiencies after weaning because of the changeover from mother's milk to a diet of cheap, starchy, easily digestible foods, like cassava, yams and bananas. The stomachs of young children will not hold enough of these bulky staples to provide an adequate supply of protein.

This acute situation was underscored by a study conducted last year in the Philippines. Nutritionists found that over 80 per cent of all children under the age of six were underweight, and many, especially the young in rural areas, were growing at an abnormally slow rate.

The advanced symptoms of malnutrition are



well known: swollen bodies, peeling skin, brittle, reddish-brown hair. What is less immediately visible is the enormous toll malnutrition takes on the physical and mental development of the young. Where death certificates are issued, the death of pre-school children in the poor countries is generally attributed to measles, pneumonia, dysentery, or some other disease, but in fact, these children are often victims of malnutrition, and because of their weakened state, easily succumb to disease.

Impact of undernourishment

In many of the poor countries of Asia, Africa and Latin America, children under six years of age account for half of all the deaths that occur. In Nigeria, for example, 180 of every 1,000 babies still die before their first birthday. In India and Pakistan the number is 130, and in Peru it is 110. Many other children die before reaching school age, and more die during early school years. These figures are particularly disturbing when compared with the death rates among babies in more developed countries, where only 11 infants in every 1,000 die in their first year in Sweden, only 18 in the German Democratic Republic.

The impact of undernourishment is not always limited to death during the early years. Recent experiments with monkeys have shown that severe malnutrition during the formative years results in emotional problems and difficulty in adapting to change later on. Protein, crucial for children's mental development, is often lacking in the diets of pregnant women. The infant, unable to get enough nutrition in the fetus during critical stages of development, may never recover completely.

Protein shortages can impair the growth of the brain and the central nervous system, often preventing the realization of genetic potential and permanently reducing learning capacity. The relationship between nutrition and mental development was strikingly shown in an experimental group of thirty-seven Mexican children who were hospitalized for severe protein malnutrition before the age of five. They were found to average 13 points lower in IQ than a carefully selected control group that had not experienced severe malnutrition.

Unfortunately, some of the effects of malnutrition in the early years are lasting and irreversible. No amount of compensatory feeding, investment in education, or environmental im-



provement in later life can repair damage to the central nervous system. Protein shortages today are depreciating the stock of human resources for at least a generation to come.

Nutritional needs

Man's food-energy, or calorie requirements, vary with individual physique, level of physical activity and climate. Standards for an adequate daily diet range from an average of 2,300 calories per capita in the Far East to 2,700 per capita in Canada and the Soviet Union. People in most of the rich countries of North America, Northern and Eastern Europe and parts of South America and Oceania consume 3,000 to 3,300 calories daily.

The Institute of Nutrition of the Soviet Acad-



Where income is low, cheap energy foods such as potatoes, cassava and cereals dominate the diet, often accounting for 60 to 80% of the total calorie intake. In these circumstances, protein deficiencies are commonplace. (ICEF 7121/Cerni)

emy of Sciences estimates the level of daily calorie consumption in developing countries is some 1,000 calories less than that in the developed world and at least 400 calories per day or two cups of rice below optimum nutrition.

Caloric intake is a good quantitative indicator of diet adequacy, but protein intake, essential to body growth and maintenance, is the key quality indicator. Most of those suffering from calorie deficiencies as well as many with adequate caloric intake suffer from protein malnutrition, which is not just a lack of protein but a lack of protein of high quality, such as that found in animal products (meat, milk and eggs) or pulses (peas, beans, soybeans and other legumes).

Nutrition and fertility

The problem of inadequate nutrition is closely related to rapid population growth. Malnutrition and large numbers of children per family have been linked in societies as different as Nigeria and Thailand. If half of their children die before they reach productive years, parents feel they must conceive a great many children to be sure one or two sons will survive to provide and care for mother and father in their old age.

It is no coincidence that virtually all well-fed societies have low fertility and poorly-fed societies have high fertility. Where malnutrition is widespread, it is virtually impossible to achieve low infant mortality rates. Good diet may be the best contraceptive of all.



Garden plots are good malnutrition fighters. Even small ones can provide essential nutrients not found in average diets and can mean the difference between adequate or inadequate nutrition for many poor urban or rural families. (ICEF 7120/Watson)

Adequate nutrition in terms of both calories and protein is usually achieved when annual grain use per person reaches about 550 pounds, assuming reasonably equitable distribution within the country. Of the 25 most populous countries, eight have an average consumption of more than 700 pounds of grain per year. All of these eight nations have birth rates which are significantly lower than countries with deficient diets.

Nutrition and development

The problem of malnutrition is inseparable from that of poverty. Traditional food habits and lack of nutritional education contribute to malnutrition; but these are in many ways simply

manifestations of poverty. Even in the United States, malnutrition is present—among migrant workers, in parts of the rural South and Appalachia and in urban slums. The Select Committee on Nutrition of the U.S. Senate recently estimated, on the basis of U.S. nutrition standards, that 6 per cent of the national population suffer from malnutrition. Only the provision of food assistance by the federal government to tens of millions of persons keeps the number from being much higher.

The connection between poverty and malnutrition is impossible to ignore in the poor countries. Where income is low, cheap energy foods such as cassava, potatoes and cereals dominate the diet, often accounting for 60 to 80 per

cent of the total calorie intake. Protein-rich livestock products or pulses are usually sparsely available in these circumstances, and protein deficiencies are commonplace.

Within individual developing countries, agricultural development strategies affect the quantity and quality of food available and the distribution of employment and income. Alternative development programmes have been successful in increasing production, but have had vastly different effects on nutrition. Both Taiwan and Mexico have enjoyed the benefits of the Green Revolution, but, in part because Taiwan has emphasized individual land holdings, a broader distribution of income and family planning, nutrition levels are higher there than in Mexico.

Improving nutrition

As noted, rising income as well as population growth are generating a rapid growth in the demand for food supplies. The impact of rising affluence on the consumption of livestock products is evident in trends in the United States over the past generation. For example, each person now consumes more than twice as much beef as in 1940. Poultry consumption has risen from 18 pounds to 51 pounds during the same period.

There is now a northern tier of industrial countries—beginning with the United Kingdom in the west and including Scandinavia, Western Europe, Eastern Europe, the Soviet Union and Japan—whose dietary habits more or less approximate those of the United States in 1940. As incomes continue to rise in this group of countries containing some two-thirds of a billion people, a sizable fraction of the additional income is being converted into demand for livestock products, particularly beef.

If the world's affluent minority continues to expand its consumption of livestock products, it will be outbidding the world's poor majority for food in two ways. Scarce agricultural resources and the grains and high-protein feeds they produce will increasingly be used to meet high-income consumer demands rather than direct human needs. Furthermore, the prices of available livestock products and other proteins will be pushed even farther beyond the reach of those who already most desperately need additional protein in their diets.

If the average citizen were to reduce his consumption of beef, pork and poultry by 10 per cent, an additional 12 million tons or more

of grain per year would become available for purposes other than livestock production.

Much can also be done to improve nutrition in the burgeoning cities of the developing world through urban gardening. Widely used in Europe in the food-short days after World War II, gardens are making a comeback in the industrialized world as one way to combat rising food prices. As malnutrition fighters, they make even more sense.

Relatively small garden plots similar to those found today in England and the United States can mean the difference between adequate and inadequate diets for urban families. Ghana has already begun a national programme extending gardens to the rural village, where the vegetable garden can provide essential nutrients not found in average diets.

Nutrition tomorrow

In the last few years, there has been an alarming increase in malnutrition. Only a global strategy can reverse this situation and lead to a resumption of the slow, though uneven and irregular improvement of nutrition among the world's poor, which generally prevailed from 1950 until 1970 or so.

Family planning must be made available to all those who desire it. Even persons who are most optimistic about our agricultural potential admit recent rates of population growth cannot be allowed to continue for long. Without a well-supported family planning programme, the world's diet will only deteriorate.

At the same time, a concerted effort to increase food production in developing countries is needed. Food-short nations will eventually have to be able to feed themselves or the battle with malnutrition will be lost.

Finally, the industrialized world and the oilrich will have to increase shipments of food aid and substantially improve the amount of their financial assistance for agricultural development. A year after the Rome Food Conference, commitments in these areas fall tragically short of demand.

If we fail to implement this nutrition strategy, the world will face a growing deterioration in child nutrition and a sombre future. Not only will growing infant death rates be a moral outrage, but they will inevitably contribute to an undermining of social and political systems, and a frustration of mankind's efforts to create a workable world order.



PHOTO REPORT FROM INDIA



(Far left) A brother and sister suffer severe malnutrition during Orissa's drought, But even in the best of times when harvests are good, nearly half of India's 85 million children under five are anaemic and nearly a million child deaths each year are caused by malnutrition. New approaches are being tried to bring permanent nutrition benefits to children and mothers (ICEF 7127/Myers)

A village women's group is preparing a nutritious powdered food mix which can easily be added to milk or water or made into a dough. Making better use of locally nutritious food resources is one approach being used to improve the family's daily diet.

(ICEF 7128/Myers)

making better nutrition a way of life

One of the most formidable tasks India faces is helping millions of chronically under-fed people reach a healthy nutritional level. The task is especially difficult because food production is always lagging behind the growth of population

What is needed to reverse this trend is nothing less than a diet revolution, both in food supply and consumption. At present, both are

inadequate. As a result, nearly half of India's children under five years are anaemic; millions who have outgrown breast-feeding face blindness from Vitamin-A deficiency; millions of mothers are run-down and anaemic. Many are tubercular.

When sudden food crises arise, urgently needed food is provided by many sources, but this is only a temporary solution. India's prob-



(Below) Introducing new food habits is not an easy task. In many rural villages, women are still using primitive cooking methods and feeding children traditional foods that do not provide the necessary nutrients, especially when they are very young. Mothers must be persuaded to open their minds to new and better ideas. (ICEF 7123/Wolff)



lem is a deeply-rooted one, for even in good times, even when harvests are abundant, the daily diet of the average Indian is deficient. And should there be a lean season, the most vulnerable part of the population—children, pregnant or nursing women, and the aged—are brought to the brink of starvation.

Only long-range measures will help to solve the country's problem. One approach is the provision of integrated services so that Government departments co-operate with one another in helping improve conditions of life for children—better nutrition and nutrition education being essential components. UNICEF is helping the Government in this effort so that permanent benefits will be made available to children and mothers.

Another important measure is encouraging local food production instead of relying on costly imported supplies. But new foods and new diet ideas, no matter how nutritious they are, must be accepted by the people. This is



(Left) At the State Health Institute in Lucknow, women receive training in nutrition, (Below) Then they go to nearby villages to teach mothers about nutritious foods and how to prepare them. (ICEF 7124-7125/Wolff)

easier said than done, for people have strong prejudices against foods they are not used to eating.

Changing food habits comes slowly to the Indian people. Relief officials still recall peasants of drought-stricken parts of eastern India in 1966 complaining because they had been sent wheat flour instead of their staple rice. "What can we do with this?" was the question most people asked.

A recent diet survey in southern India revealed that while young housewives learned new ideas about nutrition from the radio and health visitors, they admitted that their mothers and mothers-in-law were the unquestioned policy-makers about the family diet.

When soybean oil and other new nutritious ingredients were used to provide a mid-day meal to pre-school children in the north, mothers complained, "it tastes different, how can our children eat it?" Large amounts of spices had to be added to satisfy the mothers.





The challenge is to show the average rural housewife how much she can improve the family diet with locally available food—and without much extra expenditure. This task must be done soon for it will be years before India can hope to rebuild the buffer stockpiles of food that drought and flood have diminished in recent times.

A number of activities are already underway. An Indo-Dutch project is helping village women's groups (mahila mandals) to make a nourishing mixture of powdered, roasted wheat, soya, Bengal gram (chick-peas), peanuts and unrefined brown sugar, and package it for easy storage and use.

Instead of relying largely on the distribution of imported food supplements, CARE-India is now stressing the importance of research and the use of local vegetables. The goal is to build new improvements into the local diet rather than to try to alter it drastically.

A nutrition rehabilitation centre attached to a paediatric clinic in Jammalamadugu, Andhra Pradesh, is teaching mothers how to prepare simple low-cost diet supplements that are easy to obtain and make a vital difference to their children's health.

In addition to helping the Indian Government build its integrated services for children, UNICEF is continuing its assistance to a variety of projects aimed at putting nutritional theories into practice and supplementing mother's milk with extra nourishment from special foods.

The future of India's children depends on better monsoons, better crops, better food distribution, better medical and social services. But perhaps most important of all is the need to make more people realize that growing in and around every village and hamlet are neglected food resources that can provide the nutritious ingredients to help build strong and healthy children.

The real key to better nutrition in India is not food parcels, but education, along with food production. It is a tragic waste for India's 85 million children under five years to be ill-nourished, and nearly a million child deaths each year to be caused by malnutrition, when food is within hand's reach.

Wheat is an important ingredient in some of the new food mixtures now being prepared and packaged for easy storage and use. The task is to convince people who for generations have relied largely on their traditional diet of rice that more nutritious foods are now being made available to them. (ICEF 7126/Wolff)

it's cheap... it's simple to use... it saves lives

A little inexpensive packet, called "Oralyte", can make the difference between life and death for untold numbers of children.

One of the most important causes of death in acute gastro-intestinal diseases in infants and young children is the dehydration caused by intense diarrhoea and vomiting, symptoms sometimes very similar to those of cholera.

But a simple treatment to restore the lost fluids and essential body salts is to be found by mixing the contents of "Oralyte" with one litre of water and giving it to a child over a 24-hour period. The present factory cost to UNICEF for one packet is 10 cents, but plans are being made to bring the packaging costs down considerably.

Treatment of dehydration is imperative to avoid allowing dehydration by *itself* to kill the child, which happens too frequently in tropical climates or when children are already in a precarious state of health or nutrition.

How new is this treatment, and is it reaching enough children who could benefit from it?

"The treatment has been known for several years," states Dr. P. L. Fazzi, Chief Medical Advisor to UNICEF from the World Health Organization (WHO), "but unfortunately it is not yet generally in use".

WHO has been a leader in the development of oral rehydration, and UNICEF now includes "Oralyte" in its standard list of supplies. UNICEF has already distributed it to Bangladesh, Burma, India, Indonesia and Somalia.

Dr. Fazzi believes that what is especially needed now is to disseminate information on oral rehydration, and to actively promote its use in every possible way:

-Maternal and child health centres, hospi-



tals, general health centres and health workers in the field at all levels can be encouraged to safely and usefully employ oral rehydration;

—With the simplest instructions, mothers can make and use the solution in the home;

—Labelling and production of instructions in national languages and clearly depicted illustrations for illiterates will make the treatment more widely known and used;

—Distribution channels within the countries must be developed;

-National production should be promoted where the demand warrants it, through provision of salts, packaging material and possibly machinery.

Continuing studies are already underway by WHO to assess aspects of local production and distribution in Yugoslavia, Turkey, and the Philippines, and there are plans to extend these studies to other countries, particularly in Africa.

Some of the largest medical schools in the United States, including Johns Hopkins and the Harvard Medical School, have asked UNICEF for sample packets of "Oralyte" for teaching and trial purposes.

According to Dr. Fazzi, this simple, inexpensive treatment has proven to be so effective wherever it has been used, that "it is imperative that it be made more readily available to infants and young children, especially throughout developing areas of the world."

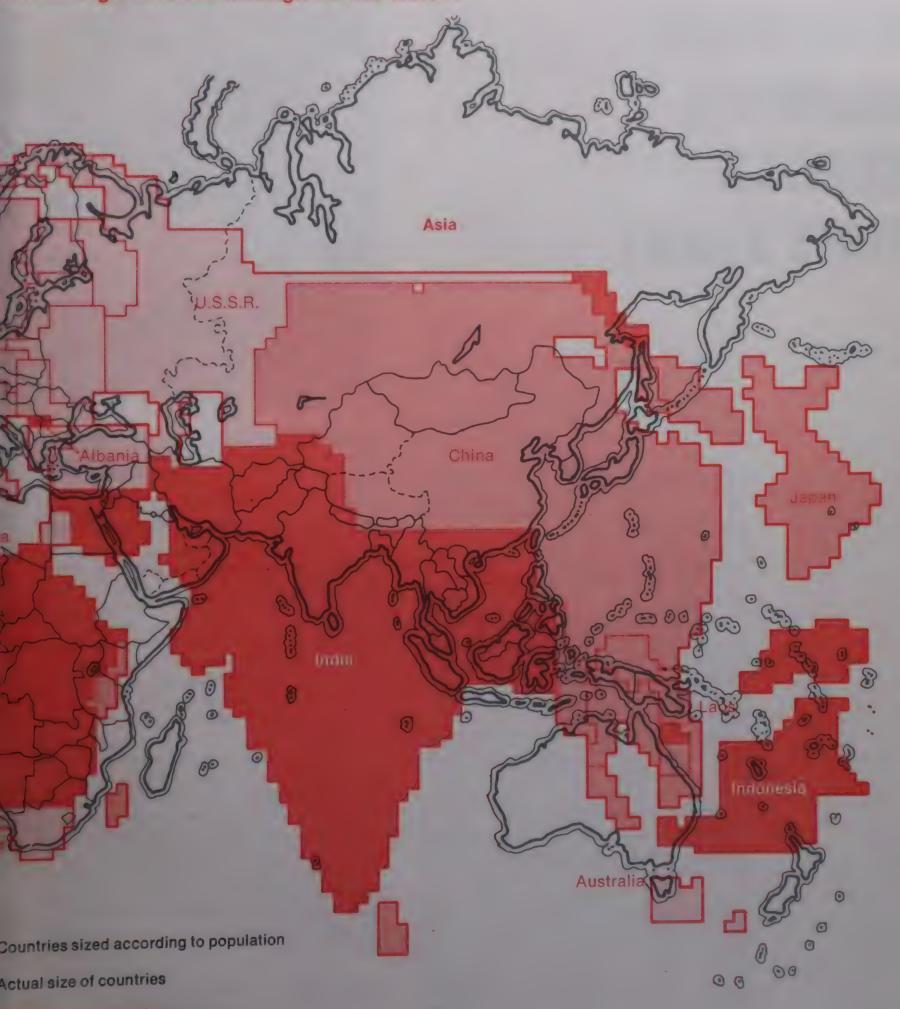
People an

Who is getting enough, less than enough, mo



Calories

nan enough calories throughout the world?



Average calorie intake:

At least 10% above adequate

Adequate to 10% above adequate

Below adequate

STOPPING FAMINES BEFORE THEY START

Jean Mayer

Contrary to widespread popular belief, famines are not inevitable. Today all the necessary elements exist for a system to deal with one of mankind's oldest enemies. It's about time the world put this system into practice.

Ever since World War II, despite a rough balance between international food supply and demand, at least one nutritional emergency each year has broken out somewhere on the globe. As a result of the world food and energy crises of the past three years, this supply-demand balancing act has broken down, and malnutrition and famine have increased dramatically.

The world, however, still tackles this sort of emergency on an ad hoc basis; each time the relief process has to be "re-invented". Desperately needed help is delayed, and in the process, too often the emergency develops into a disaster.

Too much of the suffering is needless. A solid body of information now exists on every aspect of relief operations, even including an early warning system, which could enable emergencies to be contained, if not prevented.

This information covers administration, monitoring, the types of help needed, the roles to

An international authority in his field, Dr. Jean Mayer is Professor of Nutrition at Harvard University. Under his direction, a major five-volume study, "Priorities In Child Nutrition In Developing Countries", was carried out by 39 experts. Commissioned by UNICEF, a prime objective of this recent study is to show that the nutritional problems affecting the world's children can be managed.



be played by doctors, the army and police, and the vital co-ordination of internal distribution and external aid. (A suggested system is outlined in the box appearing on page 20.)

Demystifying the famine menace

Unfortunately, the historic acceptance of the inevitability of famine stands in the way of tackling it systematically. The advent of mass communications, rather than exploding this myth, seems only to have compounded it.

The danger now, as UNICEF's Executive Director, Henry R. Labouisse, recently pointed out, is that public opinion and many governments will become "hardened" to instantly-televised suffering and discouraged by the accumulation of crisis and disaster.

Like the road-toll, deaths from starvation are now accepted as "facts of life"—unchanging and unalterable. What then, so the reasoning goes, is the point of continuing efforts to help?

The real truth is that the lack of a systematic approach to the famine threat has itself led to an unhealthy mystification of the phenomenon.

It is this mystification which is now the greatest barrier to real progress: a world which does not understand famines is condemned to repeat them.

The danger of emotion

One of the factors contributing to this mystification process is the emotionalism which is a consistent characteristic of the ad hoc approach.



Continuing surveillance of children's weight and height provides early warning signals of impending emergencies. A survey team checks health and nutritional status of children in an Ethiopian village. (ICEF 7129/Balcomb)

It goes hand-in-hand with this approach's lack of timeliness.

Famines, perhaps more than any other type of disaster, can be seen and attacked in an early stage of development. One of the most sensitive indices of the approaching danger is found, for instance, in the weight curves charting physical growth among children in the vulnerable socioeconomic sectors of a society.

With early warning and timely, systematic action, impending food shortages can be fore-stalled or mitigated — with measures relatively straightforward and well-understood, and at a fraction of the cost of ad hoc action later.

Yet, even in the Space Age, the absence of sufficient warning or adequate preparation is a regular feature of the nutritional crisis. Urgency is thus virtually guaranteed, and with urgency comes drama—the expensive and avoidable "race against time".

Of course, this is the point at which the world is finally called to join the rescue effort. In the circumstances, emotionalism and perhaps a certain amount of "verbal overkill" have proven seemingly unavoidable so far.

The tendency is to over-dramatize the crisis in order to get action.

I think this happened to a certain extent last autumn when the world food situation was ex-

tremely precarious, as indeed, it continues to be.

In fact, we had every reason last year to fear that a great many people might die of starvation this past spring, and that unless action was forthcoming, the death rate might be in the millions.

There was verbal overkill when people spoke of two or three orders of magnitude greater than that. The risk was never quite that great.

A number of United Nations officials spoke of 400 million people at risk. In the Press, this was often translated as 400 million starving, which is a very different thing. It was not necessarily the fault of the Press; there were a series of intermediaries between the first statement and the last.

But the lesson is that people now ask: where are all the corpses? They conclude that the situation isn't really as bad as we said, and not worth worrying about.

It is dangerous to keep on predicting everworsening catastrophes because people will not believe us when the situation does, in fact, become much worse.

The numbers we have are bad enough without exaggerating them.

The arithmetic of famine relief

One aspect of this situation which can be tackled immediately stems from the proposition that the information of the public should not be overestimated and likewise, the intelligence of the public should not be underestimated.

It would be much better from now on if, instead of broad statements which people have difficulty interpreting, we tell it like it is.

We must explain where the food stocks are, and the gaps—and come up with very specific alternatives. "Unless such-and-such happens, this will be the result"... and so on.

For instance, without transfer of grain, 60 million people would starve or that grain-transfers available from North America, plus money to buy more from other countries, will mean so many people fed, but so many more still unfed.

In other words, action can be promoted by recognizing that the level of information of interest to the world at large is such that we ought to be more specific in describing both the problems and the answers.

As a matter of fact, that is much more likely to create the climate of opinion which will force governments to do something.

Example of an equation

Let us say that we find the Indian subcontinent ending the year with a 10-million ton grain deficit: 1 kg of grain is roughly 4,000 calories, enough to feed 2 people a day. Thus a metric ton will feed 2,000 people a day, a million tons will feed 6 million people for a year.

Ten million tons thus represents a year's food needs for 60 million people.

This is the sort of equation people can understand readily. To continue the assumption, we could figure out how much foreign exchange is available in the countries concerned to buy grain on the open market: enough, let's say, to buy three of the 10 million tons needed.

That still leaves 40 million people without food. How do we get the other seven million tons? Let's say it is available—1 million tons in Australia, another million in Canada, five million in the U.S. Can the money be made available from West and East Europe and the oil-producing countries to buy this amount?

These are the mechanics of helping in a food emergency. They are not too complicated to be understood but for some reason they are never explained—so that public opinion, even when it really wants to do something, is never exactly sure of what it should press for.

A perspective on the numbers game

We should also get these figures into a proper perspective. This year, India and Bangladesh

were, in fact, short by a total of 10 million tons. Compare that to the fact that in the U.S., 146 million tons of cereals were fed to animals.

The U.S. is not alone in converting enormous quantities of grain into meat and animal products. Canada consumes about as much per head of population, Germany and France almost as much, and the Soviet Union is close behind.

But again the figures are not compared or explained. People end up reeling before assessments such as the "400 million starving" and feeling the situation must be completely hopeless.

The fact is that the amounts of grain needed are not as large as all that, if grain is utilized directly. But there is a lack of specificity in all those terms which has the result of making aid much more difficult to obtain.

Thus the unconscious mystification process which famines have undergone has proved self-defeating for the efforts to tackle them.

This sort of emergency in most cases is a matter for deliberate, straightforward and timely action, not urgent, emotional, over-dramatized appeals. Rather than an impenetrable stroke of enigmatic Nature, it is as much as anything a matter of arithmetic—and fairly simple arithmetic at that.

When this is understood, the world will be ready to implement the simple system which is waiting in the wings.

A System for Dealing with Famine

The sort of system which could be developed from the accumulated experience of the past three decades should begin with the organizing of national and international disaster relief organizations. These would focus on disaster procedures, set up and co-ordinate early warning systems and keep up-to-date inventories of background information and local conditions. Here are some specific measures:

- Information on crucial factors like health and nutrition in each region would be "banked", with surveillance systems to keep a continuing watch for any tell-tale decline, usually the first sign of impending emergency.
- Contingency plans would be drafted, with likely requirements listed and possible sources of food, medicine, transportation and personnel established.
- Possible co-operation with the armed forces would be explored together with the stockpiling of essential supplies, including certain types of food; alternative distribution systems and the planning of logistical options would also be considered.

- Disaster or famine manuals and checklists should be published, and the training of personnel begun not only through the distribution of adequate material and briefing sessions but also through the holding of "disaster manoeuvres".
- Ultimate responsibility for actual operations would be vested in a national disaster relief director with quasi-dictatorial powers. Governmental, international and voluntary agencies would all be responsible to this officer, with co-ordination to avoid waste, duplication and gaps in the relief efforts.
- In the rehabilitation period, the system would first concentrate on the return of displaced populations, restoration of essential services and creation or continuation of "food for work" programmes—moving later into long-term development programmes utilizing the spirit of innovation and self-help often generated by the circumstances along with the relaxation of bureaucratic regulation and the extensive use of para-technical and para-medical workers.

The grim facts of life on Haiti

Alastair Matheson

Few countries provide grimmer statistics than the Caribbean nation of Haiti—first Black Republic in the world.

Here are just a few bare facts:

—In 1970, the infant mortality rate of 146.1 per 1,000 live births reported by the Haitian Statistical Institute was the highest in Latin America—main cause of death being gastroenteritis. According to the National Planning Council, the rate today stands at 133.8 per 1,000.

—At present, Haiti has one doctor per 50,000 of its five million inhabitants. The ratio of dentists is lower—at one per 100,000. Total number of hospital beds is around 4,000.

—Malnutrition seriously threatens the health of Haiti's children. The National Nutrition Bureau has reported that seven per cent of all infants and pre-school age children suffer from kwashiorkor, a severe form of malnutrition, 27 per cent are gravely malnourished, and at least 69 per cent suffer from some degree of protein-calorie malnutrition. Most Haitians get only half of the proteins and calories they need for minimum health requirements in the tropics.

—Twenty per cent of the population over 15 were literate in 1971 and only 17 per cent of children of school age actually attended school, mainly in the urban areas. (The figure is expected to reach 20 per cent by 1976.) Of the

On a recent field trip to Haiti, Alastair Matheson, Deputy Director of UNICEF's Information Division, examined many aspects of the long-standing nutritional problems which pose an especially serious threat to the health and wellbeing of the island's children. Photos are by Mr. Matheson.

few children in school, only three per cent actually complete seven years of education, at least half dropping out after the first year or two. There is, on the average, one teacher to 70 pupils.

How is it that Haiti should be in such a distressing situation today, surrounded by countries with much higher living standards?

The answer is complex and begins, in fact, with Christopher Columbus who landed on 5 December 1492 on the north-western tip of the island he named "Hispaniola" (Little Spain).

Ruthless rule

The ensuing two centuries of ruthless Spanish rule saw the near-extinction of the island's Arawak Indians and the importation of West African slaves, whose descendants now form 95 per cent of the population. In 1697, Spain handed over the least desirable third of the island to the French, who named their Caribbean colony "Saint Domingue".

It lasted just over 100 years. After a successful slave revolt in 1803, the country gained its hard-won independence under the old name of Haiti (meaning "mountainous"). Thus it was that the freed slaves under the leadership of one of their number, General Dessalines, set up the first-ever Black Republic in the New World, after inflicting such an ignominous defeat on Napoleon's troops that, disillusioned, he sold a much vaster slice of territory on the American mainland to the United States. (This was the historic "Louisiana Purchase.")

With a tumultuous past behind it, during a lengthy succession of varied rulers (the U.S. occupied Haiti from 1915 to 1934), the Caribbean island republic has only recently begun to



Only one fifth of Haiti is arable land. The rest consists of steep, stony hillsides from which most people must eke out a living. These contour strips are an attempt to check the serious erosion and get more arable land to feed the country's large population. (ICEF 7106)

devote a major part of its slender resources to improving conditions of life. Despite much bilateral aid and assistance from many United Nations agencies, there is an enormous backlog to be made up. Malnutrition is one of the main impediments to development.

Half a century behind

Today Haiti finds itself at least half a century behind most of its neighbours as regards a developed infrastructure. Roads are little better than rutted tracks snaking over the mountain ranges—impassable for weeks on end because of mud and landslides in the rainy season. There is no need to enforce a speed limit—it is virtually impossible to drive anywhere outside of Portau-Prince at more than 20 mph. Donkeys are the chief means of transport—buses, even the open-sided "Mammy-Wagon" type, are scarce and travel in them quite a luxury.

Of its 10,700 sq. miles (27,700 sq. kms.), only one fifth of Haiti is arable land. The rest consists of steep, stony hillsides, mostly badly-eroded by the tropical hurricanes which mercilessly lash the island every season. Although the best land is in the valleys and plains, the bulk of the 5 million population is excluded from these areas because they are mainly privately-owned. Instead, most people must eke out a living as best they can from the precarious hillsides. (There is only an average of 0.18 of a hectare—one hectare is equivalent to 2.471 acres—to serve each inhabitant of Haiti. At the present

growth rate, population will double to 10 million by the year 2000.)

In its economic development, Haiti has followed the pattern of most smaller Caribbean islands, making maximum use of the arable land to grow crops for export—coffee in the mountains and sugar on the plains—using the earnings to import food. Now that inflation is adversely affecting most of the Caribbean countries, they have come to appreciate the fallacy of over-concentration on growing crops for export, neglecting food production for their own people.

Insufficient food

This has meant that as far as Haiti is concerned, the people today each receive on the average a daily intake of only 1,700 calories and about 40 grammes of protein, although the minimum dietary standards recommended by WHO for the tropics is between 2,500 and 2,800 calories daily and 60 grammes of protein. While it has been calculated that there is only sufficient food available on the island to provide the total population with half of the nourishment needed to keep them fit and healthy, in practice, the poorer strata of society get even less than half, especially the larger families.

Although the gravity of Haiti's malnutrition problem has been realized for many years, efforts to combat it over the past decade have not had much effect. This has been mainly because the efforts have not been sufficiently co-



ordinated and were too sectoral in approach, despite the 1965 Government law creating a National Committee to fight against malnutrition, and the formation of a Nutrition Bureau.

It was only within the past year that an enlightened and concerted attempt was made to deal with the problem. Now better nutrition is the object of a well-integrated programme in which the Government has the assistance of no less than six United Nations agencies, including UNICEF. Emphasis on local food production is strong, and nutrition projects on the island are being linked closely to child health, water supply and environmental sanitation projects.

UNICEF's contribution to the fight against malnutrition, which has been carried out in co-operation with WHO and the concerned Government departments, includes help with equipment and in training nutrition workers at various levels. There have been several seminars for key personnel in the field, special transport has been supplied besides home economics equipment, medicines and drugs for health services, and agricultural tools for applied nutrition operations.

Most recently, assistance has also been extended to the installation of rural water supplies and sanitation projects in certain parts of Haiti.

Lack of statistics

One serious problem hindering nutrition work, as well as most other development projects in

Haiti, has been the lack of reliable statistics for adequate planning. This is just as much of a problem today as in the past, for even now, it is impossible to secure reliable information on births and deaths, as census figures are based only on sample surveys.

"It still costs \$3 to register the birth of a child in Haiti" said one international aid worker. "Considering this is equivalent to two weeks for the average breadwinner, it is not surprising that few poorer people register births—and it costs as much to register a death."

In the southern part of Haiti, where the island stretches out a long arm towards Jamaica, five years of dedicated work by one foreign expert has yielded a rich and valuable harvest of statistics which do reflect a fairly accurate, though localized picture, of the state of malnutrition. He is an Italian doctor, sent by WHO, Dr. Luigi de Luccia, who is based at Les Cayes with a highly active and mobile team of nutrition workers, backed by health aides, sanitation workers and others. They are constantly moving throughout the district to implement the Tripartite Nutrition project, carried out by the Government of Haiti with assistance from WHO, UNICEF and UNDP.

Basically the work combines simple health services and training with a statistical gathering apparatus which is modest, but very efficient and economical.

The statistics collected between 1973 and

Youth club members apply fertilizer, donated by UNICEF, by the spoonful to the roots of maize plants. Inflation is making people realize the importance of growing more food for local needs than only using the more fertile plains for export crops. (ICEF 7119)

1975 showed a marked drop in the prevalent illnesses. For instance, gastro-enteritis, one of the most prevalent among young children, was recorded as 3,784 in 1973, 4,147 in 1974, but only 1,133 in 1975. For malnutrition, the figures declined steadily from 8,781 in 1973 to 7,043 in 1974 and only 3,376 in 1975.

Addition to diet

One of the many valuable tables produced by the mobile team in Les Cayes shows the main foods eaten by the half million people in the district, and lists the respective calorie protein and other values. The staple maize diet is traditionally supplemented by such foods as cassava, plantains, millet, vegetables and fruit.

However, the Government has now introduced a food known as *acamil* which is a local blend of maize and bean flour, providing the highest protein-calorie intake of all the foods listed. At the moment, *acamil* production is limited to about 1,000 tons a year with distribution through the chain of 56 health centres dotted all over Haiti. This provides the Govern-

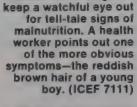
ment services with one weapon in the fight against malnutrition.

Babies left behind

While present-day Haiti could be any part of tropical Africa, one common sight in rural Africa is missing. Nowhere are mothers to be seen carrying infants with them on the way to market or to the fields. Haitian women seem to have lost the typical African habit of close physical contact with infants.

Babies and young children in Haiti are frequently left at home with elder sisters or other women when the mother has to go out. The result is that many babies receive a very irregular supply of breast milk, and when the mother is away from home, the infant often goes hungry or is given unsuitable food as a substitute. Only the well-to-do people can afford to give babies costly imported formula foods.

This, then, is yet another factor contributing to the low nutrition standard on Haiti—it would seem that almost everything is against the young child in the battle for survival.



Mothers are taught to



Water supply

When it comes to water supplies and sanitation on Haiti, an even graver threat to the young child is revealed. Only 12 per cent of Haiti's five million people have potable water available (the rest is polluted). An estimated 94 per cent of the population have no latrines available.

However, in Les Cayes and three other districts where special projects are underway, provision of clean water and installation of latrines has a high priority despite the grave situation in the country as a whole.

One encouraging development is the attempt to educate rural people about the importance of better nutrition for children. Many 4-C Clubs (similar to the 4-H Clubs of the U.S.) are now established where young Haitian men and women are learning the importance of nutritious foods and how best to grow them with the use of fertilizer and insecticide provided by UNICEF.

A special radio programme on nutrition is put out over two local radio stations. Work done at vocational and rural schools is being increased. In urban areas of Haiti, the literacy programme started in 1969 is now achieving some useful results and a nutrition component has been included in tuition material prepared in the Creole language. One special booklet bears the simple title "Nutrisyon".

Food shortages

Significant steps have been taken to create an awareness among parents that young children need special foods. Now the problem in Haiti is—how to get the right food? This has been made more difficult by the recent serious drought which has hit much of the country, resulting in even less food being available than in normal years.

The most severe effect of the worst drought of the century has been felt in the north-western arm of Haiti which stretches out towards Cuba. This area, the Department du Nord-Oues, has always been the poorest in terms of agricultural yield and is less populous than most other areas. Even the massive importation of food aid from bilateral and United Nations sources has not

Women learn to prepare nutritious foods for their children. The Government is introducing acamil, a local blend of maize and bean flour with a high protein-calorie content. (ICEF 7118)



been sufficient to stave off acute hunger for the 300,000 people on the stricken peninsula.

Recent reports tell of people supplementing their meagre maize and rice supplies with plantains, mangoes and edible roots. Even the ubiquitous breadfruit has become a vital "reserve" for many in this critical shortage period—the same species which Captain Bligh, in his famous voyage in the "Bounty", was commissioned to bring from Tahiti to the Caribbean islands but was subsequently brought by other vessels.

Despite some recent rain, the food shortage is expected to be felt all over Haiti, and there are fears that instead of only enough food to meet half of the island's annual requirements, this year's crops will yield only a quarter.

Haiti's future?

What lies ahead for the rapidly-increasing population of Haiti, faced by one of the most pessimistic sets of economic conditions to be found in any of the countries listed today by the United Nations as "most seriously affected" (MSA) by the global economic crisis?

Some signs of hope lie in the rash of small light industries and assembly plants which are

growing up on the outskirts of Port-au-Prince. Tourism, suffering from a temporary setback due to the economic crisis, may revive soon because Haiti has much to offer inquisitive North Americans.

For its part, the Government is making a genuine effort to come to grips with the malnutrition problem, for it realizes that until it can check the present trend, little development work can be undertaken. One limiting factor, however, is the lack of skilled manpower within Government to handle the increased administrative burdens which development brings, and this is worsened by the chronic "brain drain", under which so many of Haiti's most gifted people seek better conditions and a more prosperous life elsewhere.

But seeing the dedicated band of paramedical workers going about their tasks around Les Cayes at least gives some signs of hope for the future. More and more Haitians are needed to come forward to help their compatriots overcome apathy and take part in self-help efforts for a better life on that Caribbean nation which had attained such spectacular economic growth before the French Revolution that it was referred to as "France's richest colonial jewel".

One of the 56 centres in Haiti which give nutrition education and advice to mothers. Lectures are given in Creole, using Creole, French and English posters. UNICEF is helping to train nutrition workers, sponsoring seminars and providing supplies. (ICEF 7110)



Photo ICEF 7051 by T. S. Sa

The month when the children wait for food

Jim McDowell

In the language of the Iteso people of Eastern Uganda, as in many African languages, each month of the year is given a descriptive name. August—the month after the millet harvest is "the month of big stomachs"; but, in poignant contrast, the pre-harvest month of May, when the granaries are empty, is "the month when the children wait for food".

All over the vast savannah areas of Africa, where the main staple foods are cereals and legumes, the lives of millions of people are conditioned to the rhythm of the rains, the harvest, and the pre-harvest "hungry months" when grain is scarce and often full of weevils, and when they must look to the perennially-available but low-protein cassava for their major source of food.

It is in these hungry months, when the millet

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A traditional village granary can be greatly improved to prevent spoilage by plastering the straw basket with stabilized mud, then adding a tin with presson lid, after the bottom has been removed, to provide an insect-proof emptying spout. (ICEF 7131/Campbell)

crop is growing and ripening, oh how slowly, under the brazen sun that the spectre of malnutrition stalks the land. It is in these months that many children, weakened by malnourishment can die of illnesses which would hardly affect normal children. Growing children are always the first to be affected, and are the most seriously affected by food scarcity. It is, perhaps, not by chance, that the month of May is

called "the month when the children wait for food", rather than "the month when people wait for food".

Traditional ways to store food

The peoples of these areas have not accepted this annual problem with complacency or without trying to do something about it. They

make very ingenious use of the resources available to them in trying to preserve and store food from one harvest to the next. Many of these methods, developed by trial and error, and by patient observation and reasoning over the centuries, are very effective, considering the limitations of the materials available—but they are not effective enough to prevent the ravages of rodents, insects, damp and moulds which can result in destruction of most of the crop in a few months and which can leave the remainder in an unpalatable and, sometimes, polluted condition.

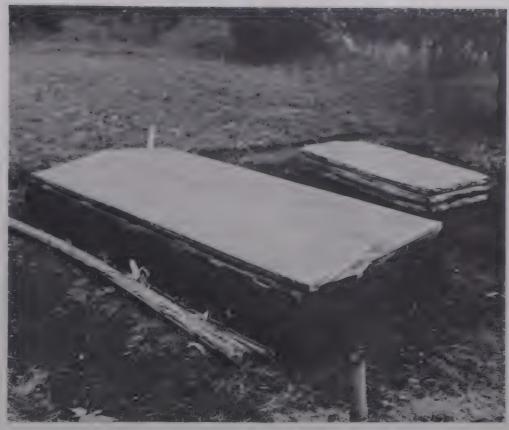
Traditionally, grain is stored in granaries which are usually large baskets woven from reeds or twigs. These can average some 50 cubic feet in capacity—no mean feat of "engineering". The baskets are supported on legs or on wooden platforms to raise them from the damp earth and the flood water from the rains. They are often plastered with mud, and the large open mouth of the basket is covered with a conical roof of grass or reed thatching.

Many ingenious traditional methods are used to control insect pests in stored grain. In some areas cooking fires are built under the granary platform so that the heat will help keep the grain dry and the smoke will discourage insects. Some peoples mix aromatic herbs or other plants which have insect repellent properties with the stored grain, whilst others mix siliceous earths, ash, or sand with the grain. This not only hinders the penetration of insects, but the sharpedged particles scratch the waxy coating on the bodies of the insects, causing them to die by dehydration.

Another practice is that of mixing the small grains of millets with the larger grains of sorghum or legumes so as to provide a tightly packed mass through which insects find it difficult to penetrate. Judging by the amount of thought and ingenuity devoted to the problem, the conservation and storage of food is obviously very much a "felt need" of these peoples, and any appropriate innovations which can help them meet this need are likely to be readily accepted.

Preventing waste

Problems in food conservation and in prevention of massive levels of waste are by no means confined to areas where food supplies are markedly seasonal. Africa currently produces much more food than is needed—yet her food supply is marginally inadequate. The dif-



ference, and the cause of much malnourishment and hunger, lies in the waste of some 25 to 30 per cent of all food produced—a waste of food and a waste of lives that should be preventable. Prevention of this waste can make all the difference between starvation and plenty—between life and death, and today, something is being done about it.

In this vital area of assistance, as in the many other activities aimed towards a *long-term* solution to the problems of child malourishment, UNICEF, working with other UN agencies, is helping the African peoples to take positive action. This action is being taken through development of and application of "appropriate" technologies.

Appropriate technologies start from "where people are". The idea is first to identify those aspects in existing traditional technologies that best lend themselves to improvement. Then it is necessary to provide improvements which are not only within the extremely limited means and material resources available, but which are also culturally appropriate. Innovations which tend to run counter to cultural or traditional mores have very limited chances of acceptance.

The need to conform to traditional mores, and the sense of security conferred by such conformity is inextricably woven into the fabric of traditional attitudes, as Ecclesiastes pointed out some 24 centuries ago when he said "all things are full of labour... the thing that hath been is

A solar dryer made largely from locally available materials. Improved sun drying techniques have helped to reduce crop losses during lengthy periods of storage. UNICEF is providing plastic covers to construct solar dryers in several countries in Eastern Africa. (ICEF 7132/Campbell)

that which shall be; and that which is done is that which shall be done; and there is no new thing under the sun".

To effectively influence "that which shall be" and "that which shall be done", we must start with "that which is done". We must attempt to work from within the culture rather than to attempt to replace or destroy it. Appropriate technologies have been developed in the field of food conservation which will enable peoples to dry their harvested crops more effectively, and to improve their traditional methods of storage.

Some practical improvements

The traditional granary can be greatly improved in effectiveness by thoroughly plastering the basket with mud stabilized with locally available "pottery" clays, by providing a wooden or mud-plastered basketwork lid which can be firmly plastered in place once the granary is filled, and by providing an insect-proof emptying spout made from bamboo "pipe" securely closed with a close-fitting wooden plug. The granary can be rat-proofed by fitting conical

rat guards—made from beaten-out tins, or mud plastered basketwork — to the legs of the supporting platform. These simple improvements, combined with the local "know-how" on repelling and destroying insects, can result in reduction of waste and much longer life for the stored crops.

Appropriate technologies of this type are not just on the drawing board—they are already in action in Africa with UNICEF assistance.

Extension of improved sun drying methods and the construction of improved granaries are already underway in the Teso district of Uganda. These appropriate technologies will not only improve grain storage, but they will also permit the drying and lengthy storage of many other nutritious foods and vegetables which are also scarce in the hungry months.

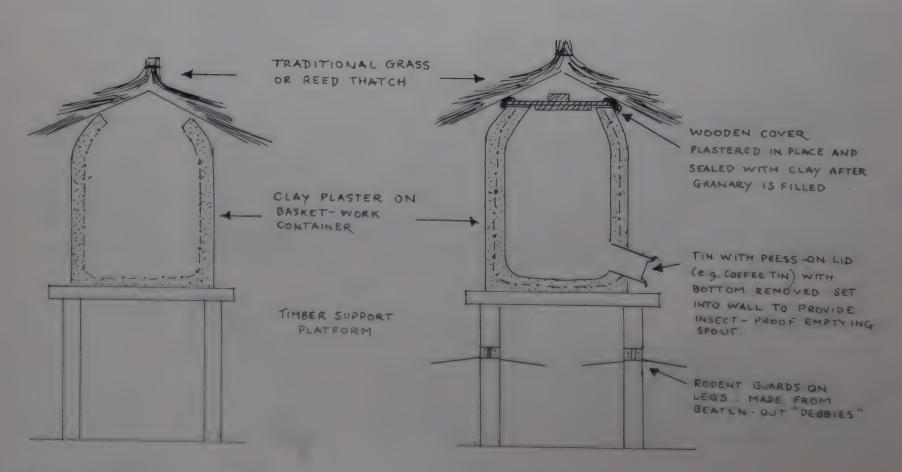
Hopefully, the Iteso children will thus have a better and more balanced diet and, hopefully, the Iteso people will soon have to look for a new name for the month which we call May. Perhaps they will call it "the month when the children used to wait for food".

SKETCH No. 1.

SECTIONAL VIEWS ILLUSTRATING SIMPLE IMPROVEMENTS TO TRADITIONAL GRANARIES

EXISTING TYPE OF GRANARY

IMPROVED GRANARY



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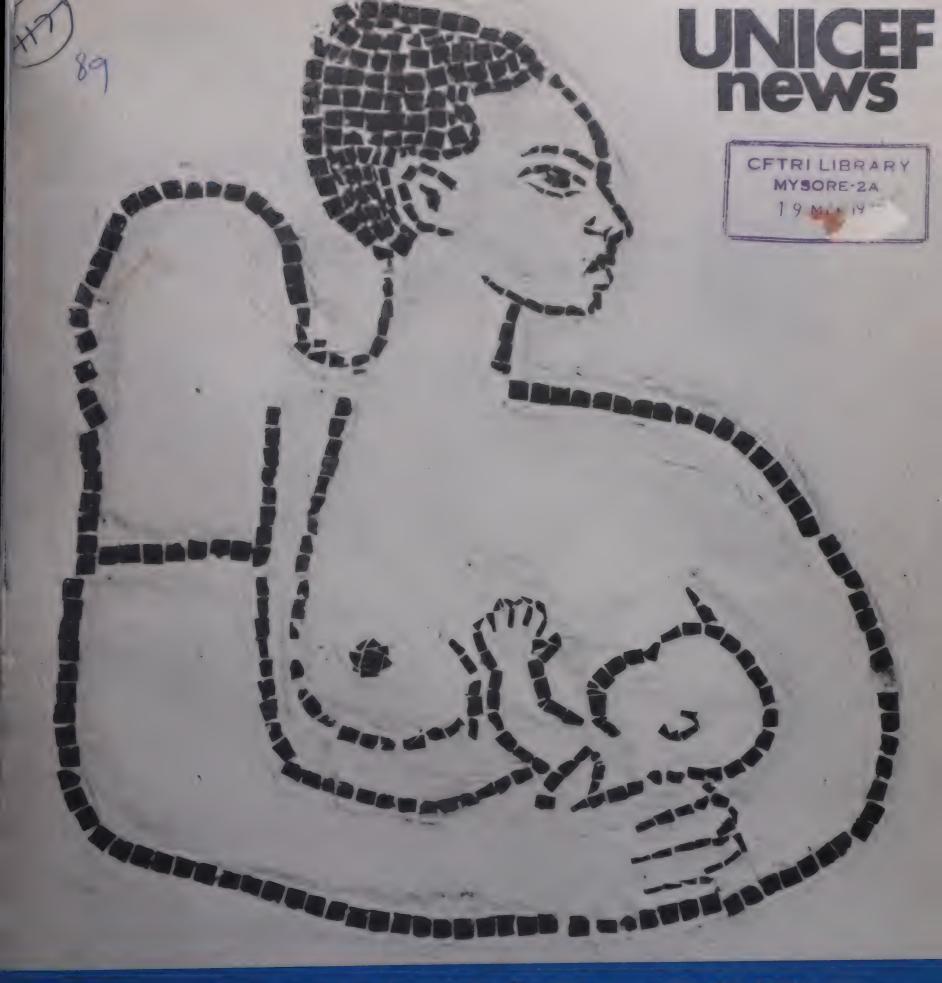
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FIGHTING CHILD MALINUTRITION PART 2

UNICEF NEWS

The subject of child malnutrition is of such importance that UNICEF NEWS has devoted two issues to it. Part I was Issue 85/1975/3.

Issue 86/1975/4
Editor: Miriam Miller
Design: Bernard P. Wolff



New Initiatives in Bangladesh. "Freedom but no food"—that was the story in Bangladesh after a devastating civil war, floods and drought. But innovative projects are introducing new sources of nutritious food supplies according to Glan T. Davis, Special Consultant to UNICEF's Executive Director. (Page 3)

Nutrition Scouts: Another "First" in Uganda. An experiment to train young people to detect early signs of child malnutrition has far-reaching implications for the entire developing world, in the view of Jim McDowell, Chief, Food Technology and Nutrition Section, UNICEF's Nairobi Office. (Page 9)





The Decline of Breast-Feeding: Sales, Sloth, or Society? Infant malnutrition is increasing because many Third World mothers are turning to formula-feeding. *Dr. Johanna T. Dwyer* believes inappropriate promotion and use of products badly designed for developing countries is a major cause. (Page 14)

New Vistas for Mariamu. A one-week course in growing kitchen vegetables helped a Kenyan mother improve her family's diet and grow surplus vegetables to sell. Writer *Ruth Seitz* believes this kind of practical education can help more women raise their living standards and nutritional status. (Page 19)





Honduras: Land of Rich Soil and Undernourished People. Moises Dias Bonilla, a small rural farmer in Honduras, struggles against insuperable odds to make a bare living and feed his family adequately. Journalist Agostino Bono explains some of the obstacles to improvement plaguing most small farmers. (Page 23)

One Day Sudan May Feed the Mid-East. One of the poorest, most underdeveloped countries, the Sudan has the greatest unexploited food-producing areas in the world. *Donald Allan*, Chief, Public Information Services, UNICEF's Geneva Office, describes major agricultural projects now underway. (Page 27)



Other Feature: Cartoons by Doug Brunner: (Page 13)

Cover: This mosaic of a mother breast-feeding her child decorates the front of the Ntenjeru Health Center in Uganda. The work of the Centre is described in the article, "Nutrition Scouts: Another First in Uganda" on page 9. (Photo ICEF 7173/Esben H. Thorning)

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United Nations Children's Fund, United Nations, New York, N. Y. 10017

New initiatives in Bangladesh

Glan Davies

"Bangladesh, the hungriest of them all." So ran a New York Times headline, end December, 1974.

"The scenes are numbing. A woman howling

During his three-year assignment in Dacca, Bangladesh as the Special Representative of the Executive Director, Glan T. Davies travelled throughout the country, studying the needs and problems of the people, especially children and mothers. He is presently at UNICEF Headquarters in New York as Special Consultant to the Executive Director.

with a dead infant in her arms. Naked emaciated children sitting on pavements with tin begging cups. Old men lying on burlap bags, staring vacantly."

Such were the street scenes in the national capital, Dacca, three years almost to the day since the country gained independence.

Had it, then, come to this—freedom but no food? It had indeed for many who, following the civil war, found themselves locked more firmly in poverty and deprivation. To the losses and dislocation due to war, there was yet to be added destruction by the elements.

Village women have the opportunity to engage in "Food-for-work-for-food" projects which UNICEF has organized. The women will share in the vegetable crops they produce and in the meantime they are rewarded with cereal food rations.

(ICEF 7165/Bouhafa)





Frequent floods and droughts in Bangladesh take an enormous toll in human suffering and pose a serious threat to food production. Ways are being found to ensure a regular supply of nutritious food despite the caprices of nature. (ICEF 6940/UNICEF)

At nature's mercy

Nature is wayward in these parts and proved particularly so in the immediate post-war period. Even as the new nation struggled to its feet, floods and drought and floods again struck in pitiless succession. 1974 was a particularly bad year. Massive floods wrought havoc with what had been a promising rice harvest; world economic conditions were reflected in extreme shortages of essentials and violent escalation of local market prices.

How many died that year of accumulating deprivation and disease? Ten thousand? A hundred thousand? More? Impossible to tell. When homesteads are destroyed and breadwinners die, the survivors willy-nilly become listless wanderers. They defy enumeration and frustrate the tidy statistician.

Months have gone by since the Times correspondent passed that way. In July, 1975, the welcome monsoon rains swept inland from the Bay of Bengal. The countryside became a car-

pet of green as new rice seedlings sprouted. With the rains came hope, but no longer exultation. Bangladesh has learned to temper expectations with very cautious optimism.

"Food-for-work"

A nation of 75 million people, (of whom 40 per cent are landless labour) with per capita annual income equivalent to only U.S. \$70, Bangladesh still walks the razor edge of hunger and deprivation. All, figuratively-speaking, must keep fingers crossed against possible renewed disaster. But hands are not idle, and activities are underway to provide opportunities for the most impoverished in disaster-prone areas to secure relief from suffering and a measure of self-rehabilitation through "food-for-work" projects.

The poor and unemployed are given the chance to contribute their labour in non-skilled tasks, such as digging irrigation canals or raising flood protection embankments in return for quantities of cereal foods distributed at the

close of each work day. The Government, using supplies donated by the World Food Programme and by several bilateral agencies, has many such projects in action.

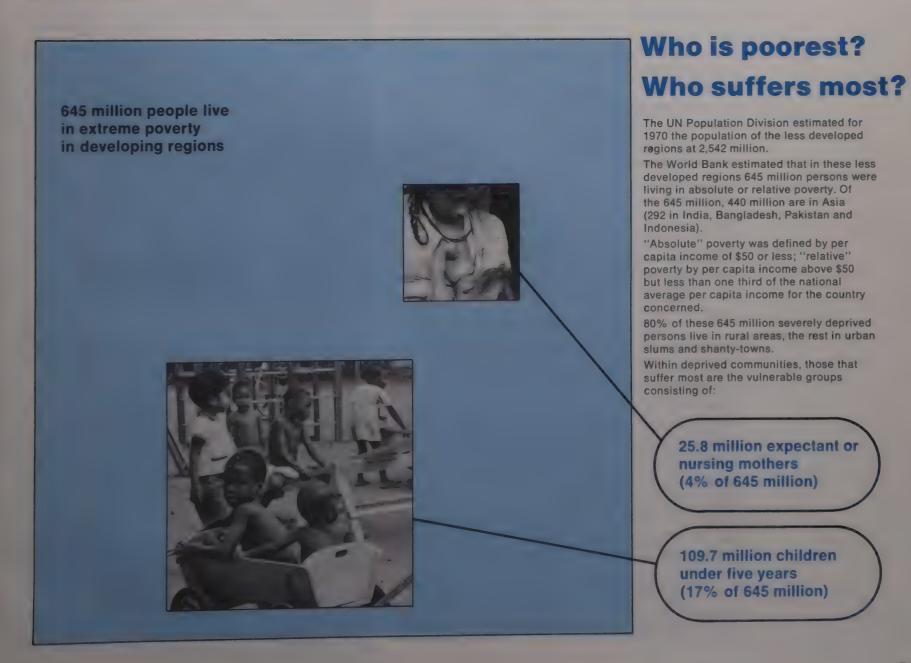
UNICEF, using commodities received as direct donations, has organized a special version of works programmes under the extended title, "Food-for-work-for-food". These are down-to-earth practical nutrition programmes in which village women and some of their older children are engaged in producing vegetable crops which they will eventually share and are meantime rewarded with cereal food rations.

Surprising response from women

The UNICEF-assisted project in Jamalpur, (North Mymensingh) has attracted much attention since its inauguration eight months ago. It is described as a "break-through" on two main counts: the unprecedented use of "woman-power", and the ingenious use of hitherto unproductive land.

In a break with traditional social conservatism, and contrary to expectations, women have come forward in large numbers to work together in public as field teams. The project was initially devised for 100 female workers. To the surprise of the organizers, 840 women, representing that many families, immediately came forward. From a test case of social response to a works programme for women, the project turned into a test of the resourcefulness of those in charge to provide enough work. All applicants were duly absorbed and quickly organized themselves into well-disciplined enthusiastic working groups.

This unprecedented opportunity to socialize has provided the women a chance to reveal their readiness to respond in other directions. Increasing numbers are requesting family planning services which are being provided by Dr. Zafrullah Chowdhury and his team of paramedicals. With comprehensive health coverage, he combines family planning, women's literacy



and "grow better food" campaigns, an effort aided by UNICEF.

Unexpected bonus from abandoned land

The other "break-through" in the Jamalpur project concerns acres of land, long abandoned as unproductive, which by simple ingenuity have proven to be quite otherwise. The mighty Brahmaputra river forms a western boundary here, and along its banks are extensive tracts of land overlaid with some six-inches of sand deposited by seasonal floods.

No good for rice cultivation, the traditional, virtually exclusive concern for rice—"the rice syndrome"—doubtless led to the area's abandonment. But, simply digging through the loose sand, good fertile soil can be found which is excellent for winter crops. For its first season, the Jamalpur project has yielded good returns of soy-beans, maize/corn and sunflowers. The seeds of the latter have high protein content and yield valuable cooking oil.

Preparations are underway to extend this type of programme to some 200 sites, especially in the other disaster-prone areas of Eastern Rangpur and Western Mymensingh. Employment is anticipated for some 200,000 women, and arrangements are being made for child care at the work sites, which, hopefully, will be a feature of all future "food-for-work-for-food" projects.

To provide a continuing constructive link with the present 840 women during the monsoon period when field work is suspended, adult non-formal education classes are being organized by a leading indigenous voluntary group, the "Bangladesh Rural Advancement Committee" (BRAC), which has trained 15 local persons as instructors for the purpose.

A little fish—a big source of protein

In a country like Bangladesh, where hunger is acute as well as chronic, it is necessary to approach the nutrition problem in practical ways. In this respect, the Thailand Government's donation to UNICEF of a half-million fish-fingerlings earmarked for Bangladesh was eminently practical. The species, *Tilapia nilotica*, flourishes throughout Thailand and is a popular item in the Thai diet. It is characterized by rapid growth and prolific fertility. Inland waters are extensive in Bangladesh, and their

Fish has been in short supply for years in Bangladesh.

Now a prolific, high-protein species, Tilapia nilotica, is being bred as the result of a gift of a half-million fish fingerlings donated by Thailand to UNICEF for development in Bangladesh. (ICEF 7116/Bouhafa)





quality in terms of nutrients for pisciculture is possibly superior to that of Thailand.

Fish, traditionally the main source of protein in the Bangladesh diet, has been in very short supply for several years. Over-exploitation, failure to re-stock and general neglect of her water resources drastically reduced the availability of edible fish. The diminution of local supplies of fish spawn led to the abandonment of extensive water acreages which were allowed to silt up or overgrow with weeds.

A chain reaction

The Thai breeder-stock of t. nilotica has set off something of a chain reaction. Despite initial losses of fingerlings, due to local inexperienced handling, there has been impressive progress. Mr. Damrong Silpachai, a fisheries expert released by the Thai Government to serve with UNICEF in Bangladesh, devoted full-time to training Government staff and other personnel in management techniques and in supervising the multiplication of stock at 15 Government District fish farms.

Progressively, more fish culture centres will be involved in the project until all 84 central fish farms throughout the country are engaged in the multiplication of t. nilotica as well as other species. These centres will supply small fish to individual families or village co-operatives wishing to develop their own fish ponds. Such dissemination has already begun. Individuals have shown considerable interest and have made purchases at the very nominal prices charged. Grown nilotica has also been harvested and consumed in various taste-trials and declared as palatable as the most popular of the now scarce indigenous varieties.

New waters for the "miracle fish"

Bijoy Singh Dighi is in effect a man-made lake, several acres in extent, excavated centuries ago for water conservation, irrigation, domestic and animal use and fish breeding. For decades it lay abandoned until selected for cleaning and preparation to receive some of the imported young t. nilotica. From an effective first delivery of some 50,000 fish fingerlings, it is now estimated that there are 2 million small fish in that water area that can be drawn on to stock other locations.

As another of its "food-for-work-for-food" projects, UNICEF has organized the clearance of an additional 200 acres of water for conversion to fish farming. The cost of this project? 210 tons of wheat distributed as a daily ration

to workers, including many women who can expect further benefit as edible fish become available in these neighbourhood waters.

By fortunate coincidence or perhaps, to some degree, by consequences of the publicity that nilotica has aroused as a "miracle fish", the Government of Bangladesh has committed Takas 20 million (U.S. \$1.4 million) to develop 1650 acres of inland waters as fisheries. This represents a major rural works programme which will provide much needed employment today and, hopefully, an abundance of cheap fish tomorrow.

More vegetables and poultry

The earth embankments which impound many of these inland waters, like Bijoy Singh Dighi, themselves offer many acres of land capable of intensive cultivation.

UNICEF is aiding in this development to help resettle impoverished widows and their children who, with training and supervision, should be able to increase manyfold the local supply of papayas, bananas, pineapples and citrus fruits as well as varieties of vegetables.

These embankments will also serve for poultry development devised by Mr. Allan McArdle, FAO poultry adviser. The "McArdle concept" for Bangladesh—where feed for animals is as limited as is food for humans—is that of the "poultry fertilizer factory". With some initial provisions of poultry feed, selected improved strains will be maintained in small batteries of 150 birds.

Such a flock, Mr. McArdle has calculated, will yield 2 tons of droppings a year which is sufficient fertilizer to produce thereafter 3 tons of sorghum a year, which in turn will provide ample fare for the birds. Eggs and poultry meat for the keepers and for local sale will be the economic dividend and the means of diet improvement for the community.

"We have the fish, where's the water?"

There has been a further novel development in the first successful production of small carp fish by the technique of induced spawning. Under controlled conditions, specifically desired species can be obtained free from contamination with that of other species, a condition which contributed to the decline of fresh water fish in Bangladesh. Now, the induced spawning of a single pair of local carp, (a favourite when obtainable), at the Comilla fisheries centre produces 150,000 small fish. This proven proc-

ess now gives urgency to the need for clearance of large scale water areas to exploit this potential. Last year's cry, "We have the water, where's the fish?" may shortly turn, by virtue of tilapia nilotica's fertility and induced breeding of carp, to "We have the fish, where's the water?"

More water to drink and raise crops

UNICEF's interest in water extends in many directions. In underwriting the cost of local production of hand pumps, UNICEF is not only helping the Government increase its supply of safe drinking water for rural people, but also making it possible for the pumps to raise subsoil water to grow an extra crop of wheat and vegetables on land which in the dry season has traditionally remained unused.

This is of vital importance to the "small man" whose land holding is too small to justify the alternative of a deep mechanically operated well. With intensive hand pumping, which duty could be shared among the members of families working contiguous plots, some 10 to 40 acres could be irrigated depending on the lie of the land.

This "off-season" production of non-rice crops, primarily vegetables, is another unfolding potential in Bangladesh, where the man/land ratio is such, 1400 per square mile, as to suggest that the country must already have exhausted all possible resources. Things are indeed tight, but as Stephen Minkin, who heads the UNICEF Nutrition section would say, "a modicum of imagination and a spot of ingenuity can help unbaffle some baffling problems!"

Twin goals: imagination and will

The nation-wide distribution of vitamin A to children as prevention against blindness, the cultivation of soy-beans in thousands of school gardens, the growing popularity of soy products for human consumption and the introduction of agriculture into the primary school curriculum, are continuing elements in UNICEF assistance on the nutrition front in Bangladesh.

The more recent activities recounted here, involving imaginative use of food aid, are perhaps more remarkable for their resourcefulness than for the modest material resources committed to achieve such ends. Given the political will on the part of the Government to foster such initiatives and to achieve their maximum extension, Bangladesh, the chronically undernourished, could yet evolve a very practical national policy and programme of applied nutrition.



Nutrition Scouts: Another "First" for Uganda

The best way to prevent serious malnutrition is to detect early warning signs. Young people are receiving training in Uganda to act as "nutrition scouts". (ICEF 7166/Thorning)

Jim McDowell

Situated in the heart of tropical Africa, only a few miles from where the Nile begins its tortuous 4,000-mile journey to the sea, the Ntenjeru Health Centre has become the base for an experiment in prevention of child malnutrition

In his special capacity as Chief of the Food Technology and Nutrition Section in UNICEF'S Nairobi Office, Jim McDowell travels extensively throughout the area to study the special nutrition problems of children and mothers and to explore new and practical ways of solving these problems. During a recent tour in Uganda, he visited the Ntenjeru Health Centre where he learned about an innovative project to train young village people to become "nutrition scouts".

which, if successful, could have far-reaching implications for child health throughout Africa and, indeed, the developing world.

Uganda has always been well to the fore in nutritional developments, and this new approach could well represent another "first".

The area surrounding Ntenjeru is the "cradle of the Nile". It is lush and well-watered, and a wide range of crops flourish in profusion in the rich red-brown earth. For many people of the area, it is a healthy, happy place because, in addition to the health centre, there is also a gleaming modern 100-bed hospital, one of 20 rural hospitals established by the Government in recent years.

For others, unfortunately, there are less happy conditions. When one visits the health

centre or the busy out-patients department of the hospital, one begins to realize that all is not well with all of the children in this veritable Garden of Eden. All too often one sees mothers patiently waiting their turn, nursing young children who show all too clearly the emaciation or the oedema and sparse reddish hair of severe malnourishment.

Early detection the best prevention

Failure to recognize the earliest signs of the onset of malnourishment and a tendency to seek traditional remedies for their ailing children, means that many come to the hospital or health centre as a last resort when the child is on the point of death, and when only skilled hospital treatment can save its life.

"We are experts at resuscitation of severely malnourished children" said the paediatrician, shaking his head sadly, "but this is rather like being expert at resuscitation of drowned people, without doing anything to teach people to swim or to prevent them from falling into the water in the first place. We must do something to get to these children at an early stage and prevent them from reaching this condition."

He was quite right, since, apart from the fact that hospital facilities were being severely strained by the need to cure a condition which was preventable, the children appearing at the hospital probably represent only the tip of the iceberg. Malnutrition is a stealthy killer; it does not obtrude upon the public gaze.

The affected children spend their lives in the home compounds, and the condition is so insiduous in its gradual onset, that by the time illness is noticed, the child may already be in a very serious state. A sudden bout of malarial fever or diahorrea, or an attack of one of the common childhood diseases like measles or whooping cough, and a young life can be snuffed out. The only trace of its passing may be a sorrowing family, and a little mound of freshly turned red earth in the sultry shade of the banana grove.

An idea is born: "nutrition scouts"

"What we need" said the paediatrician "are nutrition scouts—people from the community who can visit every home and detect malnourishment in its earliest stages." Thus the idea for the Ntenjeru experiment was born.

Was the idea possible and feasible? How much would it cost? What kind of training



would "nutrition scouts" need? How would they deal with malnutrition when they found it? The difficulties seemed immense, and it would have been very easy to simply reject the idea as unworkable, but positive thinking and determination to meet the need prevailed, and the idea was vigorously taken up by the Uganda Ministry of Health who, in collaboration with the Paediatrics Department of Makerere University, and with some assistance from UNICEF, have launched a pilot scale trial at Ntenjeru.

The first step was to involve the local community and local health workers. The county chief called a meeting of all the chiefs in the area who, when the idea was put to them, gave it their enthusiastic acceptance, and immediately set up a working committee to organize community participation and to select people



After a short training period to recognize obvious symptoms of malnutrition, the "scouts", equipped with measuring tape, log sheets, leaflets and a bicycle, are expected to visit 8 to 10 homes a day within the 5-mile radius of the Ntenjeru Health Centre where 5,000 homes exist. (ICEF 7167/Thorning)

to serve as "scouts".

Eight young people were selected. All have primary education and some have secondary education. Apart from a basic educational standard, however, the main criterion applied in selection was a desire and willingness to be helpful to people.

To carry out simple but vital tasks

These young people will be given training in recognition of obvious symptoms of malnourishment and in making simple anthropometric measurements. Equipped with a simple measuring tape, log sheets, advisory leaflets and a bicycle, they will set out to patrol the five thousand homes which are within a 5-mile radius of Ntenjeru Health Centre, at a rate of 8 to 10 homes a day.

They will carry out simple measurements: arm circumference and head/chest circumference on all children, and they will look for obvious signs of malnutrition. When indications of malnourishment are detected, the mother will be given very simple advice on use of local foods and child care, and will be exhorted to take children to the health centre for immunizations and health care when needed.

This simple advice will be backed-up by leaving a pictorial leaflet, simply printed in the local language, at every home. The scouts will also record other simple observations on such things as home conditions and source of water supply, and will obtain background information on the recent illnesses of children.

Once the homes of malnourished children have been identified in the first 4-month period



If malnutrition signs are found, "scouts" will advise mothers about using local foods and simple child care, and when needed, urge them to take their child to the health centre to get immunizations and other health services. (ICEF 6201/Matheson)

of visits to all homes, some scouts will be redeployed to visit these homes monthly, and other homes will be visited at a lesser frequency. Those visiting "malnourished" homes will continue to make measurements on the children and will, at this stage, be equipped with simple portable weighing scales to provide an ongoing surveillance of the children's rate of growth. They will also continue to give advice.

The Ministry of Health is providing an experienced nutrition field worker to supervise the work of the scouts, and to carry out home visits in cases which need special attention. The facilities at the health centre are also being strengthened to cope with an anticipated increase in workload, particularly in immunizations and other simple treatments.

Saving lives—and money

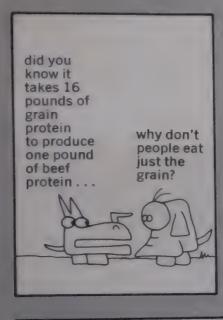
One of the objectives of the trial is to determine not only the health-effectiveness but also the cost-effectiveness of this approach. It is

estimated that the annual cost of wages for the scouts would be no greater than the cost of treating only 20 severely malnourished children in the hospital. Since annual admissions to the hospital are vastly in excess of this figure, there can be little question as to their potential cost-effectiveness.

More important, in terms of prevention of human suffering and misery, and in terms of finding and saving children who might otherwise die or be physically or mentally handicapped for the rest of their lives, the work which can be done by these scouts is not measurable on any scale of values.

Hopefully, in searching out malnutrition along the sun-dappled paths between the banana groves, the nutrition scouts of the community at Ntenjeru will also explore and pioneer new, and as yet uncharted, paths for development of simple, community-based grass-roots approaches to rural health care which can benefit all the children of Africa.

Doug Brunner

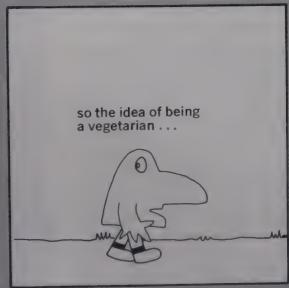




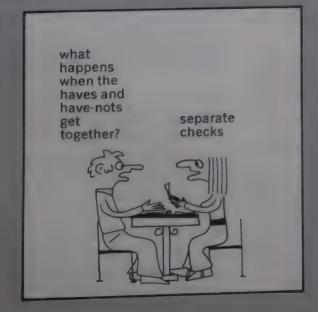


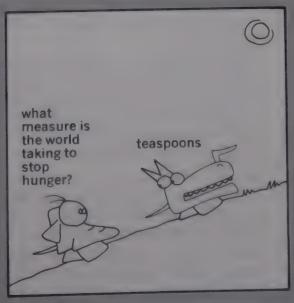












THE DECLINE OF BREAST-FEEDING: Sales, Sloth or Society?

Johanna T. Dwyer

Breast-feeding is on the decline in developing countries. Unfortunately, safe, easy to prepare substitute feeds for small infants are not within the means of the vast majority of the populations involved. The results are inevitable: increased infant malnutrition and even death, because the formulas, more often than not, are nutritionally inadequate and heavily contaminated by the time they reach the baby's mouth.

The sad thing is that this trend is an example of history repeating itself. The same thing happened in America and Western Europe around the turn of the twentieth century, and then too, it took its toll in the lives of children.

Why is this happening again? What can we do about it?

Abandonment of breast-feeding in the Third World has been encouraged by four developments: advertising and promotional practices of baby milk and infant formula manufacturers and distributors; misconceptions — both traditional and new ones—that many parents have

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A drastic decline in breast-feeding in the developing countries is causing increased infant malnutrition and even death. UNICEF and other agencies are seeking ways to reverse this extremely harmful trend. (ICEF 4722/Ling)

about feeding infants (which may become particularly dangerous as new urban oriented lifestyles are adopted); disinterest on the part of health professionals in promoting breast-feeding or in developing appropriate countermeasures; and misdirected or insufficient social welfare programmes launched by some governments.



Seductive sales campaigns

Only a very small percentage of the population in most developing countries have incomes and living standards comparable to those of citizens in the highly industrialized and richer countries of the world. Yet a substantial part of the Third World population (particularly in urban areas) is exposed to sophisticated mass media and other appeals promoting the use of formulas, baby and other artificial feeding products in a slick and convincing manner.

Too often these advertising and promotional practices increase the possibilities of misunderstanding and misuse of the products, especially by the uneducated poor. For example, some products are advertised as being particularly beneficial when the mother's milk is insufficient, but the advertisements do not clearly explain when this is likely to be the case.

Stimulating fears in mothers that their milk may not be adequate or "weaker" than product X is not only improper, but extremely unfair because most mothers in developing countries simply cannot afford product X anyway. Moreover, druggists, pharmacists, and others with a commercial interest in selling the artificial products often reiterate the advertising claims and slogans and act as informal counsellors on infant feeding.

A "convenience" mentality

The real hazard is not that the formulas and milk-based artificial liquid feedings used in place of human milk are toxic in themselves, but rather that they are used improperly or in insufficient quantity because of the ways they are advertised and marketed and because of their high price. In short, the root of the problem stems from inappropriate promotion and use of products which are badly designed for the actual conditions of life for most families in developing countries.

A combination of affluence and advertising created a "convenience" mentality about formula feeding which has spread its influence not only among the well-to-do all over the world but also among many of the poor in developing countries who can ill afford this questionable luxury. Nonetheless, increasingly elaborate artificial feedings are marketed and bought because people have been persuaded to believe that these products are superior to mother's milk. It is this belief which leads mothers in developing countries to buy artificial feeds, rather than any strong reluctance to being tied down to a breast-feeding schedule or any disinterest on their part in the needs of their infants.

Mistaken good intentions

The tragic aspect of the switchover to artificial feeding is that so many mothers in developing countries have been misled into thinking they are doing what is best for the infant. For example, formulas are often thought of not as foods but as strong medicines, and therefore used sparingly with little or no other food. Add

to this two other important factors: that the special nutritional needs of infants for protective foods are not well understood, and that the infant or young child is often the last in line in family feeding hierarchies—and the stage is set for disaster.

To make matters even worse, most children in developing countries grow up in extremely unhygienic environments, and they also suffer from many mistaken notions of health needs and proper care during times of illness. Consider the fact that many parents do not see any connection between the improper use of formulas and growth failure, nor do they understand what steps to take to remedy the growth failure should it occur. If the infant falls ill, he may be starved or put on an even more restricted diet in the hope that by so doing the disease will be "starved out". All too often the result is an undernourished infant who becomes even sicker. All of these elements are very different from those in Western countries where the use of formulas is compatible with infant and child health.

"Benign neglect"

Whether you call it disinterest, lack of common sense or "benign neglect", the sad fact is that many health professionals who are supposed to provide helpful advice and nutrition education to mothers with young infants are not doing as good a job as they should or could. This is not to say that health professionals are likely to propagate false information, but their influence—directly or indirectly—often results in confusing the minds of mothers.

For one thing, mothers who see the wide-spread use of commercial or artificial feedings for all infants in hospital maternity wards or other health facilities may be discouraged from breast-feeding their babies. Moreover, some mothers make the mistake of thinking that the milk formula itself, or company personnel selling the product, are part of the regular health system and listen to understandably biased arguments in favour of bottle feeding. By and large, health professionals are not sufficiently aware of this situation and do not attempt to counteract these harmful misconceptions.

Another misguided action on the part of some health professionals is the administration of oral contraceptives at dose levels so high that they inhibit breast-feeding. This creates an unnecessary problem since other medication schedules are available which allow family planning while preserving lactation.



But even if other methods of contraception are practiced, some health professionals fail to deal with the mistaken idea that many mothers have that if they are practicing contraception, they should not breast-feed. This, of course, is not true.

Infant formulas and the people who promote their use are, unfortunately, often more accessible and available to mothers than are health services offering beneficial advice on infant feeding. Very few medical professionals have an active interest in infant feeding, and health professionals are in short supply in any case. The end result is predictable: health professionals fail to encourage mothers to breastfeed their infants or to sufficiently explain why it is so necessary to the child's health to do so, while the proponents of artificial feedings are very successful in promoting their cause.



A Zambian grave bearing the object causing death is tragic evidence of the misuse of formulas. The real problem is not that formulas are toxic but inappropriate promotion and use of products badly designed for developing countries. (Photo/National Food and Nutrition Commission, Lusaka)

Social ills, government failures

Rapid urbanization and the push toward industrialization have altered family structures and living conditions. These changes have not always been for the good, especially in the developing world where the urban poor live in crowded slums with little or no housing, sanitation or safe water supply facilities and extremely limited supplies of low-cost, nutritious infant foods.

Working mothers have special difficulties in breast-feeding their babies. Usually the conditions are such that it is difficult, and more often than not impossible, for them to work and simultaneously care for their young infants or children.

However, since relatively small numbers of women in developing countries are able to find paid employment, and to keep it after they have had a baby, we must look for other reasons for the decline in breast-feeding. Surely one powerful influence is the "city" attitude that breastfeeding is old-fashioned, countrified, and not appropriate for town families.

Another misdirected urban influence is the over-emphasis on technical or scientific achievements which in subtle, or not so subtle ways, suggests that "scientific" artificial feeding is the way of the future. This underlying concept helps to pave the way for the younger generation of mothers to reject the traditional, and often much more sensible, ways of feeding infants and young children.

Beyond these influences, misguided governmental interventions have sometimes actively—albeit inadvertently—discouraged breast-feeding. During the 1950's and 1960's, many countries undertook misconceived social welfare



programmes to provide dried or evaporated milk to new mothers either free or at very low cost. Since lactating mothers were often excluded from such programmes, many women concluded that it was foolish to lactate and thereby forfeit the "bonus". Very few governments have made efforts to support breast-feeding or to encourage its promotion.

What are the solutions?

There is no denying the fact that the drastic decline of breast-feeding and an earlier age of weaning in developing countries have given rise to new problems for health systems to deal with. Many physicians in developing countries report that they are seeing much younger malnourished infants than they did in the past. Such young infants are exceedingly vulnerable to the bad effects of disordered feeding, and often die.

But there are also some encouraging signs of hope for the future. Breast-feeding, long "out of style" in Western countries, has made a comeback in the past decade in the United States and in many European countries. Other highly industrialized countries such as Norway, the Eastern European countries and the U.S.S.R. have never abandoned breast-feeding. Thus it is clear that the present decline in developing countries is not inevitable.

The best way to avoid the problem is to take preventive action in the first place. Current studies sponsored by UNICEF and other United Nations agencies are directed to pinpointing more precisely the causes and patterns in the decline of breast-feeding so that steps may be taken to avoid it in countries which are still free of this problem.

In the meantime, it is necessary to educate governments, medical and health personnel, as well as opinion leaders and the general public in these countries on the advantages of breast-feeding and the many precautions which are necessary to make artificial feeds safe if they are to be used correctly in disadvantaged environments. This multiple effort will go a long way in helping many families, and especially mothers, to give their newborn babies and young children a better foundation for a healthier, longer and more productive life.

A healthy, well-nourished, contented baby is the dream of all families. What is needed today is to educate medical and health personnel as well as governments, opinion leaders and the general public in developing areas on the advantages of breast-feeding and the many precautions needed to make artificial feeds safe. (Photo/Mangurian)

New Vistas for Mariamu

Ruth Seitz

On the surface Mariamu Githoni's life in the fertile highlands of Kenya follows the same pattern as her mother's and grandmother's. Bearing her husband sons—and daughters to ease her own work. Searching for firewood. Cooking. Keeping a mud-walled house. Tilling the land for the family's food.

But Mariamu's ingenuity has improved her family's lifestyle more than her Kikuyu grand-mother could have imagined. Not only can she now add an occasional egg to the diet, but she can give her children fruits and vegetables which provide the essential vitamins their bodies need. And there is still a little money left for a few amenities such as a daily cup of tea for all the Githonis to enjoy. Also, there is no fear now that the five children still in school will have to drop out because of lack of money for fees.

A "kitchen gardener"

In Nyeri's Tetu Division, a heavily-populated, high-potential agricultural area 6,000 feet high in this east African country, Mariamu is a "kitchen gardener". The fruits and vegetables that she grows to eat and sell have bettered her family's health and standard of living.

A free-lance writer who has lived in Eastern Africa for several years, Ruth Seitz has been especially interested in examining and writing about the whole process of development. She recently visited a village in Kenya and tells the story of one woman's efforts to improve her children's health through better nutrition.

Mariamu first learned about carrots and tomatoes at the Home Economics Club in Tetu during a one-week course in growing kitchen vegetables. She now grows enough different vegetables for her family and has a surplus she can sell at the local market. (ICEF 7168/Thorning)



Mariamu, the Kikuyu translation of Mary, has managed her husband's five acres since they married twenty-six years ago. A visit to her shamba (garden) on the steep bank of the constantly flowing Gura River is proof of her prowess.

Food-producing plants filled every bit of garden space except the narrow paths: rows of blue-green cabbages, some weighing 6 pounds; staked tomato stalks bearing more than 15 fist-sized tomatoes; creaking banana trees; hybrid maize seven feet tall; four beds of carrots, each at a different growth stage. Mariamu carefully pushed aside a lacy stem and pulled an 11-inch carrot for our inspection.

"Carrots and tomatoes are new foods for us," she explained. Traditionally, Kikuyus planted only maize and beans to make *irio*, a thick hash. And then this mother of seven told how she had changed and expanded her cropping.

Learning new ways at the Club

"About eight years ago, I was invited to a farmers' training centre for a one-week's course in growing kitchen vegetables. We tasted new foods, and I first heard about spacing, transplanting, ridging and also a bit about diseases.

"But what really helps me is the Home Economics Club. Each year we set up a demonstration plot on a member's land." The Government provides inputs through UNICEF funding, and trainers give horticulture advice.

"When I saw the big, healthy cabbages on our club's plot," continued Mariamu, "I started changing my method of just putting in a seed and waiting for the sun and rain and God to do the rest."

Anne Kariuki, a home economics officer who works with over 900 women in 33 clubs similar to the one that Mariamu attends, feels that women are quick to make changes that improve an entrenched practice. Mariamu was first excited about trying more scientific methods on cabbages because they were a favourite food that "we could only buy at the market when we had something else to sell."

Better crops, more income

The Githoni family records show a steady increase in cabbage production reaching Shs. 201/-(\$28) in 1973 from 250 plants. With the help of a loan of UNICEF-supplied seed—and a little extra help from nature's heavy rain on the windward slope—the family planted two crops. Mariamu has sold 1,040 cabbages for a total



of Shs. 562/20 (\$79), enough to pay for the borrowed input and her son's secondary school fees.

I inquired about a thick-stalked plant with green leaves on the top. "Kale," she said as her quick fingers plucked a bunch. "The 600 bunches I pick each week bring in Shs. 30/-(\$4.20). This is my steady income." She explained that the plant produces perennially for three years and is easy to keep free of weeds.

Selling harder than growing

According to Kenya's 1969 census, every third rural household was headed by a woman



Learning how to cook well-balanced meals for her family is possibly the most valuable knowledge Mariamu has gained at the Home Economics Club, a project which UNICEF has aided. (ICEF 7169/Thorning)

because the men were employed in towns. For these women who are full-time horticulturists and home-keepers, marketing causes a labour bottleneck. It is inefficient to spend a third of their work-week selling while the growing crops need care. Mariamu carries two backloads of vegetables to a market a kilometre away three times a week and spends those three days selling them.

Some Home Economics Clubs have discussed the idea of employing one of its members to sell all the produce for the other women. "Although they have asked me to find a suitable town property for selling," claims Mrs.

Kariuki, "I believe the women will have to feel more hardly pressed before they will take the initiative to organize themselves into a marketing co-operative."

Not having hygienic storage facilities for dried foods, the women must sell their harvest to local traders who make high profits during times of scarcity. Mrs. Kariuki regrets that "for both fresh and dried surpluses, the middlemen are taking cuts that belong to the women."

Knowledge leads to a better life

A few years ago, Mariamu learned to read at adult education classes. Literacy has sharpened



Profits from Mariamu's vegetable garden helped her purchase a cow that provides plenty of milk for her three children.

Mariamu's progress shows how practical education can help people to help themselves to a better life for everyone in the family.

(ICEF 7170/Thorning)

her business acumen and efficiency. She understands instructions on seed packets and keeps accurate records. She knows and uses the Government channels of assistance. This improved way of living has brought respect; "neighbours come to ask questions about my garden."

Indeed, the most valuable newly-gained knowledge Mariamu is putting to use is in her cooking of well-balanced meals. "Since we eat vegetables with vitamins and can buy meat twice a week, the children feel better. I give them milk from our two cows every day. I don't need to take time off from the shamba to take the young ones to the hospital as often as I did with the older children."

"When I came here to work in 1965," added Mrs. Kariuki, "malnourishment was obviously affecting at least one child in each family. Mariamu's children look so much stronger, and so do the children of many other families."

As if in celebration of her family's better life, Mariamu served us fresh milk—boiling hot to ward off the high-altitude chill. As she said a Kikuyu blessing on that healthful drink, I remembered her summary of the changes of the past eight years. "The things that used to be difficult, like maintaining the family, are no problem now."

Mariamu's progress, despite the hardships caused by increasing inflation, is convincing evidence that practical education aimed at meeting the real life needs of people can help them to help themselves in many ways—not only in specific matters such as making the daily diet more nutritious, but in generally raising the living standards and improving the quality of life for every member of the family.

honduras: land of rich soil and undernourished people

Agostino Bono

Moises Diaz Bonilla depends on the weather instead of the supermarket for feeding his family. The 26-year-old father of two works a small patch of land in rural Honduras where he grows corn, rice and beans. With good weather he can bring in two harvests a year, enough to feed his family for eight months and have a surplus to sell. The surplus provides an annual income of \$200-\$300, barely a subsistence living.

But proper weather conditions are far from normal in Honduras, a land of rich soil and undernourished people.

From January to July, a dry spell brings the danger of crop losses through lack of water. The wet season, from August to December produces heavy rains and the constant threat of losses through flooding. Many subsistence farmers routinely lose one harvest a year.

This means a precarious existence for Moises Diaz' four-year-old daughter and two-year-old son. Chronic malnutrition affects 70 per cent of the Honduran child population.

One set of clothes lasts until the children have outgrown them beyond the mother's ability to

A free-lance journalist, based in Buenos Aires, Agostino Bono has traveled widely throughout Latin America and written about a variety of social, economic and political developments. During a recent trip to Central America, he studied the problems of malnutrition in Honduras and the special hardships faced by poor farmers and their families.



enlarge by makeshift cutting, sewing and patching. The tropical climate gives mothers some leeway, with many children running around only in a shirt or trousers. Few wear shoes. The most common footwear is sandals.

Moises Diaz Bonilla, like most small farmers in rural Honduras, can barely make a living. Dependent on weather and lacking funds for new technology to morrove his crops, he worries about bank debts and having enough food for his two children. (ICEF 7171/Bono)

Fear of bad weather and debts

Most farmers, like Moises Diaz, cannot improve crop yield because they lack funds for improved technology such as fertilizers and drainage and irrigation systems. The high price of gasoline, about 90 cents a gallon, (Honduras imports all its oil) means Moises Diaz cannot afford to transport his surplus products to the better priced urban markets. Most of his surplus crop is sold to a middle-man who drives his truck to the farm. The rest is sold locally or used to barter for other necessities. It would cost Diaz about \$15 to ship a harvest to the nearest urban market, a capital outlay which he cannot afford. The Government-one of the region's poorest-is limited in the amount of aid it can give to help improve rural farm life.

With good weather the best the Diaz children can expect is a diet of rice, corn and beans

supplemented by tropical fruits from the few trees growing in the backyard of their wooden shack. As special treats in a good year, an occasional fish or chicken will be put on the table.

During the dry season, Diaz and his neighbours get deeply worried if the occasional rains needed do not fall, stunting corn growth.

"It is edible, but doesn't get a good market price," explained Diaz.

A bad harvest means going to the bank for loans to tide the farmer and his family over. Collateral is the next harvest. Many times farmers lose several harvests in a row, thereby ending their credit. Once a good crop comes in, the farmer is so badly in debt that he must use most of the cash income to pay enough debts to re-establish credit. Most small farmers soon fall into this situation making it impossible for them to accumulate a cash reserve.



Chronic malnutrition

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Ironically, small

Improvements cost too much

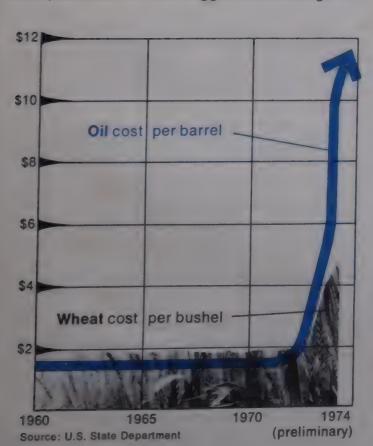
As most small farmers along the Atlantic coast of Honduras, Diaz does not own his farm. He rents the land for \$5 a manzana (1.7 acres) per harvest. Diaz farms one manzana hoping someday to add another. His yearly operating costs are about \$50, not including the value of his and his family's labour. When Diaz' son gets to be around seven years old, he will begin working in the fields with his father.

Ironically, farmers worry about a dry spell while standing on land covering rich underground water reserves caused by the wet season rainfall. Ample water supplies can be tapped by drilling around 100 feet underground, an easy process in the soft Honduran earth. Cost for drilling a well and providing a pump is under \$100. The pump and irrigation system, in turn, could be used for drainage during the rainy season. This cost, however, is prohibitive for the small farmers. Besides the initial outlay, they would have the annual upkeep and the cost of diesel or electric energy for the pump.

When asked about improved technology, the farmers shrug their shoulders. The costs are so out of range that they have never been able to seriously consider the option.

Farmer co-operatives hold promise

The Government is trying to improve the situation by encouraging the formation of farmer co-operatives to work bigger landholdings. Of





the total farms, 67 per cent are under 18 acres. In light of the Government's limited economic resources, it is hoped that by banding farmers together on larger holdings, it will be possible to reach more people with improved technology.

This plan is greatly hampered by the current world inflationary situation. Honduras is one of the poorest countries in Latin America. The gross national product is \$706.1 million. Per capita income is \$300, but 45 per cent of the population (mostly rural) have only a \$30 per capita income. Basic exports are agricultural products, mainly bananas, which do not compensate in price for the imports of manufactured products and oil, resulting in the country's chronic balance-of-payments deficit, expected to be \$187.9 million in 1975. The current foreign debt is \$232 million and is expected to reach \$822 million by 1982.

Hurricanes don't help

Worsening the situation was last year's disastrous hurricane Fifi, which caused \$150 million in damage, reducing agricultural income by 57 per cent. Fifi also caused the death of several thousand people and affected nearly 500,000 of the four-million population. Crop

Subsistence living is the lot of most small farmers in rural areas. With good weather, the Diaz children eat rice, corn, beans and some tropical fruits from their backyard. An occasional fish or chicken is a special treat in a good year. (ICEF 7172/Cerni)

destruction meant not only export losses, but having to import food at a time when the world food crisis caused high prices on the international market.

This means that the heavily indebted Government has to think hard before determining to what extent it can economically afford to help the small farmer. For instance, can it afford to provide gas pumps for irrigation if this means importing more oil? Can it afford the highly rising costs of fertilizer? Nitrogen-based fertilizers, an oil by-product, has risen in price from \$29 a ton in 1972 to \$350 a ton in 1975. Unfortunately, the answer is a practical inability to provide massive programmes to help farmers.

The rising fertilizer costs are adversely affecting food production throughout the developing world, according to Dr. Norman Borlaug, 1970 Nobel Peace Prize winner for his work in developing high-yield grain seeds.

"Unless a country is self-sufficient in oil and few developing countries are— it is forced to cut back drastically on fertilizer use," he said. "There have been sizable decreases in crop production in a number of countries, largely because of the fertilizer situation. And it will get worse!"

Hope is not enough

The situation of the Moises Diaz family is not atypical in Honduras. The country's rural population consists of 350,000 families of which over 35 per cent do not own their land.

Although statistically Honduras is rich in agricultural products, a large part of its population is faced with precarious, subsistance living. Most of the Honduran production comes from the large banana and coffee plantations, mostly owned by foreign firms. The products are mainly sold abroad. These plantations, run as agrobusinesses, have the funds for irrigation and drainage systems to cope with the weather.

The small farmer can only look at the sky and hope while his children become undernourished in an agriculturally rich land.

UNICEF in Honduras

Jim Mayrides, Programme Officer, Americas Section at UNICEF Headquarters

To help improve nutrition in Honduras, especially for the benefit of children, UNICEF has been providing assistance to the Government to strengthen nutrition activities through the health services and to promote food production at the community level.

Beneficial as these services are in themselves, what is more important is the fact that they are part of a total programme of services for children. Often referred to by its more formal title of "Integrated Services for Children", its basic philosophy is that the best way to give children a chance to grow up into healthy, mentally alert and productive human beings, all their needs—health, nutrition, education, sanitation, social welfare—must be taken into account as a total concept rather than as isolated, fragmented elements.

Since 1971 when the integrated services project was started in Honduras, with UNICEF assistance, there have been many encouraging signs that this development approach is working to everyone's advantage. Various sectoral ministries that heretofore had conducted their operations quite independently from each other are finding that close co-ordination of their activities from the initial planning through final implementation stages has been mutually reinforcing. Moreover, they are recognizing the fact that by their integration they have succeeded in creating a much greater impact on the people themselves than each service could possibly have achieved on its own.

Motivating people to participate personally in projects to improve their living conditions is the key to success in any development effort. The integrated services project begun in 1971 has already resulted in a 60 per cent contribution from

the communities themselves in the form of finances and labour. The project is so promising that UNICEF is increasing its aid for the period 1975-1978.

The accomplishments so far include community production of vegetables through co-operative farms; improvement of techniques of animal husbandry as well as extension of fish ponds as an additional source of protein; wells and dams for drinking water, irrigation systems and latrines; bridges and roads to improve communications; and the construction of new schools and houses.

Cash grants and technical assistance are provided by the governmental sectors, while UNICEF supplies pumps, pipe, some construction materials and stipends for community training courses.

During the period 1971 through 1978, the one million dollars invested by UNICEF will have generated approximately the equivalent of twenty million dollars in local resources.

What cannot be calculated in dollars and cents, but can be seen in the eyes of people and heard in the words they speak, is a new sense of promise and hope that life can be better, and more importantly, that they can help to make it better by their own initiative and effort.

In working in the villages with the people, or in the government ministries with high-level officials, one senses a growing appreciation of the potential benefits that integrated services can bring to entire communities, and especially to the most vulnerable segments of the population, the children and pregnant and nursing mothers.

ONE DAY THE SUDAN MAY FEED MID-EAST

Donald Allan

Long one of the poorest and most troubled countries of the Third World, the Sudan is on the threshold of vast development that may transform it into a major source of food for the Middle East in the coming decades.

The Sudan is Africa's largest country. Oneeighth of the continent's watershed flows within its borders. But only 13 per cent of its 120 million acres of arable land is now cultivated, and of this total only four million acres are irrigated. United Nations experts regard the country as one of the world's greatest unexploited potential food-producing areas.

An image of the future may be seen in the Gezira, south of Khartoum, where two million acres of irrigated land comprise the world's largest farm under single (Government) management. Under British administration, this "beating heart of the Sudan" was almost exclusively devoted to producing long-staple cotton for the mills of Manchester. Today, 650,000 acres are sown for wheat, sorghum, peanuts, vegetables and fruit. Even cotton is being shifted to varieties that will be more practical for the Sudan's own expanding textile industries.

As Public Information Officer in UNICEF's Beirut Office for three years, Don Allan explored development problems throughout the entire Middle Eastern region. During that period, he visited the Sudan many times and followed the Government's various activities to attack the serious problem of malnutrition. Mr. Allan is currently Chief, Public Information Service in UNICEF's Geneva Office.



Large-scale exports of grain, meat, edible oils, sugar and other foodstuffs are foreseen when new lands come under cultivation. Some Kuwaiti estimates predict that the Sudan will eventually supply 40 per cent of the needs of the Middle East, which currently is a major food-importing region. Ironically, the Sudan itself imports food today.

Water turns dreams into reality

The Blue and White Niles flow past millions of acres of land like the Gezira; fertile, flat and suitable for mechanized farming, only awaiting diversion of their waters to become green. An impressive array of development projects in various stages of implementation now promises to make this vision a reality.

This year President Gaafar Numeiry's Government expects to sign an agreement with a consortium of French companies to begin construction of a 280-kilometre navigable canal 40 metres wide and four metres deep to divert a portion of the White Nile flow between Jonglei and the Sobat River, a tributary that joins the main stream just south of Malakal, the capital of Upper Nile Province in the Southern Sudan. A single 2,000-ton, 6,000-horsepower excavating machine will dig the ditch in three years, according to Abdullahi Ibrahim, director of the project.

Nomads fill their goatskins with water, a scarce and precious commodity in the Sudan. One-eighth of Africa's watershed flows in Sudan but only 13% of its 120 million acres of arable land is cultivated—and only 4 million of these are irrigated. Experts regard the Sudan as one of the world's greatest unexploited potential food-producing areas. (ICEF 7174/Wheeler)

The Jonglei Canal, first proposed in 1904, will add at least four billion cubic metres of water a year to the Nile at Malakal. By international agreement, half of the increase will be available for irrigating the arid savannah of central and northern Sudan and half will add to Egypt's reserves at the Aswan Dam.

Regulators that will divert the White Nile near Jonglei will also feed a separate irrigation canal that, in the project's first phase, will convert 200,000 acres of dry clay plain into farmland by the turn of the decade. Construction of the regulators, canals, a road on the banks and related projects will cost \$200,900,000 according to Mr. Ibrahim, with financing expected from Arab development funds and Egypt. There are 3.7 million acres suitable for irrigated farming in the area.

Less floods, more irrigated farms

At present, the White Nile at Jonglei is dispersed in flood season over some 8,000 square kilometres of the infamous Sudd swamp, where it loses 50 per cent of its waters by evaporation before resuming its northward flow below Malakal to join the Blue Nile at Khartoum.

The Jonglei Canal will not drain the Sudd. This would be a disaster for the 700,000 Nilotic tribesmen who graze cattle there, moving from high to low pastures with the rise and fall of marsh waters. By reducing flooded areas and irrigating adjacent dry lands, however, it will greatly increase pasturage, livestock production and fisheries for the local tribes. It will also shorten river navigation by 300 kilometres. In the first phase, 100,000 persons will be settled on irrigated farms.

A ten-man team from the Kuwait-based Arab Fund for Economic and Social Development recently completed a year-long survey of Sudan's development potential and assistance needs. Kuwaiti newspapers report the fund will propose a \$6-billion, ten-year investment package to be financed by Mid-East oil producing states. The team estimated Sudan's arable land at 200 million acres, a figure that may be raised considerably when a U.N.-financed satellite photo survey of the country is completed.

New projects on vast scale

According to the Sudan Development Corporation, "the total value of new projects in various stages of planning preparation or construction is around \$1 billion" in the Sudan. The SDC, formed in 1974 with \$200 million loaned

by international banks and guaranteed by Saudi Arabia, is responsible for attracting foreign investment, identifying investment opportunities, assisting in financing and facilitating the Government's offer of tax exemptions and incentives for investors.

Major agricultural schemes include:

—The Rahad Project, which will eventually irrigate 820,000 acres by pumping Blue Nile water into virgin land southeast of the Gezira, using power from the Roseires Dam. The first phase of 300,000 acres is to be completed by 1978 with more than \$160 million financing by the World Bank, the Kuwait Fund, the Arab Fund for Social and Economic Development and U.S. AID.

—Expansion of the sugar industry from current output of 120,000 tons (against consumption of 300,000 tons) to 815,000 tons by the 1980s. Britain's Lonrho Corporation will build a refinery to serve a \$220-million project south of Kosti. New plantations and refineries at Mongalla, Renk and Melut, including Japanese, Czech and West German participation, are among projects expected to make the Sudan a sugar exporter in ten years.

—The Saudi Arabian-based Triad Corporation plans a million-acre cattle ranch in central Sudan, introducing improved breeds, feeding pens, planting fodder and building transportation links. The U.S. Food Machinery Corporation has completed a feasibility study.

Poor transportation slows progress

Transportation remains the biggest handicap to development, but here, too, major breakthroughs are in the offing. A team of 300 Chinese engineers is supervising construction of the Wad Medani-Gedaref section of more than 1,000 kilometres of paved highway that will link Khartoum with the Red Sea at Port Sudan, the country's only outlet to shipping. The Chinese segment will be completed this year. Work is underway on two of the three remaining sections; the "Italian" road between Kassala and Haiya and the "West German" road between Port Sudan and Haiya. The stretch between Gedaref and Haiya has been surveyed, and it is hoped that the highway will be in service by the year 1980. Page Communications, a U.S. firm, has been asked to set up a nation-wide microwave telephone system. Now radio is the only

One of the poorest countries in the Third World, the Sudan reveals the cruel hardships of underdevelopment, especially among the child population where widespread mainutrition and disease exist. (ICEF 6552/Matheson)



link between many areas.

Equally important is a Port Sudan-Khartoum oil pipeline on which work has begun. This Kuwait-British-West German project will move 600,000 tons of oil a year by 1977. At present, the railway is inefficiently tied up with tank cars carrying petroleum to Khartoum and returning empty. At cotton-harvest time, the single-track line is overburdened in the opposite direction, carrying the bales that earn 60 per cent of Sudan's foreign exchange, and petrol deliveries come to a halt. Private truck caravans supplement the railway by carrying what they can cross-country, but Port Sudan is piled high with goods that sometimes remain on the docks for two years. Spoilage and breakage take a heavy toll. Reopening the Suez Canal will cut shipping costs 500 per cent-Port Sudan is now the "end of the line"-but internal constraints are the major problem.

The big question

Can the human resources of the Sudan—17 million people, 81 per cent illiterate, many scattered in primitive communities with no social services—cope with development on a billion-dollar scale? This is the big question today. Fortunately, most Sudanese are farmers and herdsmen who will adapt to agricultural development. But the nation's strata of skilled workers and professionals is very thin.

The United Nations system is actively helping the Government tackle this aspect of development through health, education and training projects. U.N. surveys estimate that the Sudan has a 62 per cent shortage of sub-professional personnel and a 25 per cent shortage of labour available where the work must be done. Migrant workers from Nigeria help harvest the Gezira and other major farming areas.

The cruel hardships of underdevelopment are most apparent in the Southern Sudan, three autonomous provinces covering an area larger than France, Belgium, Holland, Switzerland and Austria combined. The South has just 13 kilometres of paved roads, only 52 doctors for some 5 million people and a high rate of infant mortality, mainly caused by a combination of malnutrition and polluted water. Almost everyone gets malaria several times in a lifetime, according to Dr. A. Marial of the South's Regional Ministry of Health. Average life expectancy is 40 years.

Leprosy, tuberculosis, Djur River blindness, polio and bilharzia are common in many parts



of the South. Large areas are closed to cattle grazing because of tse-tse flies that carry sleeping sickness.

The wood-frame hospital at Yei, a relatively "good" 63-bed, one-doctor institution serving about 100,000 people in a district near the Uganda and Zaire borders, has no piped clean water supply. In the operating room, water from a hand-filled barrel is "filtered" by a bandage wrapped around the tap. Two truck lamps powered by a tiny generator light the room for emergencies.

"Almost gone," Senior Medical Assistant Joseph Likule told visitors recently, as he checked the generator's 5-gallon tank, "We haven't received petrol for two months."

But in the South, too, there are signs of progress. The end of 17 years of civil war with the North in 1972 restored stability to the Sudan and opened the way for the return of foreign bilateral aid, voluntary agencies and the U.N.

Diversity of UNICEF aid

The Yei hospital is one of many health centres receiving drugs and equipment from the United Nations Children's Fund for example. UNICEF assists Government programmes to



Some major agricultural projects are underway in the Sudan. Power from this Roseires Dam will pump the Blue Nile's water to irrigate 820,000 acres of virgin land southeast of the Gezira. Expansion of the sugar industry and a millionacre cattle ranch are also being planned. (Photo/UN 92498)

train the medical assistants, nurses and midwives who deliver the majority of health services in the region. It supports nutrition efforts and on-the-job training for high school graduates who, because of the teaching shortage, serve as teachers without qualification. Aided by a \$2 million gift from Norway, UNICEF is providing well-drilling rigs and pumps to bring clean water to rural communities.

Dutch engineers have just completed the second span of a bridge at Juba, the regional capital, that will facilitate trucking of supplies from Kenya, reducing delays on the antiquated Nile steamer route from the North. It is the only bridge on the White Nile for more than 1,000 kilometres north from Lake Albert. British Army engineers have also built bridges across tributary streams.

At Fafa, a hamlet between Juba and Yei, villagers are putting up their own school of traditional poles and thatch. Self-help of this kind is evident throughout the region, often springing up beside the ruins of missionary schools and dispensaries destroyed in the war.

Building human resources

The vast agricultural development projects

in prospect for the Sudan will inevitably bring social change. As in the Gezira, the new farm lands will concentrate Sudanese in communities with schools, health services, clean water and training facilities.

"Development is a complex process," commented Fuad Kronfol, UNICEF's representative in Khartoum. "We have to expect that population moving into newly irrigated areas will spread malaria and bilharzia. The Nilotic tribesmen who guard their cattle as wealth, not for plowing or sale as meat, must undergo a big cultural adjustment to become farmers and commercial livestock breeders. Food habits must be changed for better nutrition. It is easier to get investment for canals and farm machinery than for the less visible, but equally important human-resource building facilities. You can grow a cash crop in a year, but it takes time to grow people. And healthy, skilled people are both the means and the end of development."

The Sudanese Government is well aware of this fact. "We must develop our people first," President Numeiry has said, "It will take time. But we are on the right road and have the resources now for a bright future."

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